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ABSTRACT

The high school portion of the "Monitoring the Future Study" is presented. Since 1975, this national survey has helped to quantify, track, characterize, and explain changes in drug prevalence, attitudes, and behaviors among American high school students. Data are reported in graphs and statistical tables for eighth, tenth, and twelfth grade students. An introduction to the survey, overview of key findings, research design and procedures, and discussions of reliability and validity issues are provided. Prevalence data for 1997 is presented and subgroup differences in gender, college plans, regions, population density, parental education, and racial or ethnic differences are compared. Data on trends are presented and the subgroups are compared. Chapters include: "Use at Earlier Grade Levels," "Degree and Duration of Drug Highs," "Attitudes and Beliefs about Drugs," and "The Social Milieu." The use of nonprescription stimulants and daily use of marijuana are included under "Other Findings." Appendixes are: (1) "Prevalence and Trend Estimates Adjusted for Absentees and Dropouts"; (2) "Definition of Background and Demographic Subgroups"; (3) "Estimation of Sampling Errors; Supplemental Tables for Secondary School Students: Trends by Subgroup"; (4) "Trends in Prevalence Rates for Specific Drugs within General Classes, Tabular Data for 1996." (EMK)

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National Institute on Drug Abuse

ED 424 505

NATIONAL SURVEY RESULTS ON DRUG USE
from
THE MONITORING THE FUTURE STUDY, 1975-1997

Volume I

Secondary School Students

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Public Health Service
National Institutes of Health

NATIONAL SURVEY RESULTS ON DRUG USE
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THE MONITORING THE FUTURE STUDY, 1975-1997

Volume I

Secondary School Students

by

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Public Health Service
National Institutes of Health

1998

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Chapter 1

INTRODUCTION

Drug abuse has been a high priority issue for the nation for nearly thirty years, with particular concern focusing on the extensive amount of drug use among this nation's young people. The Monitoring the Future Study has provided a window on this problem for most of that time. Since 1975 it has helped to quantify, track, characterize, and explain the very considerable changes in drug prevalence, attitudes, and behaviors that have taken place over the last quarter of the twentieth century. This series of annual monographs has been the primary vehicle for disseminating many of the epidemiological findings from the study, and over the years it has grown considerably in its coverage and size.

This two-volume monograph reports the results of the twenty-third (1997) national survey of drug use and related attitudes among American high school seniors, the eighteenth such survey of American college students, and the seventh such survey of eighth- and tenth-grade students. Results from the secondary school samples of eighth, tenth, and twelfth graders are contained in Volume I and the results from college students and young adults are reported in Volume II.

A 1996 monograph was not published as part of this series—the first such break in continuity. This was done because both the authors and sponsor considered it preferable to get the newer, 1997 results disseminated as quickly as possible. All of the data that would have appeared only in the 1996 volume are included as an appendix to this 1997 volume, to provide the reader access to all of the information that would normally be available in an uninterrupted series.

All of the data presented here derive from the ongoing national research and reporting program entitled Monitoring the Future: A Continuing Study of American Youth, which is conducted at the University of Michigan's Institute for Social Research and has been funded through a series of investigator-initiated research grants from the National Institute on Drug Abuse. In the past, the study was sometimes called the National High School Senior Survey, because each year, since 1975, a representative sample of all seniors in public and private high schools in the coterminous United States has been surveyed. However, the study also surveys (a) representative samples of young adults from previous graduating classes who are administered follow-up surveys by mail; (b) representative samples of American college students one to four years past high school, who are a part of these follow-up samples; and (c) representative samples of eighth- and tenth-grade students.

SURVEYS OF SECONDARY SCHOOL STUDENTS

Two of the major topics included in this series of annual reports are (1) the prevalence of drug use among American secondary school students (specifically in eighth, tenth, and twelfth grades) and (2) trends in use by those students. Distinctions are made among important demographic subgroups in these populations. Data on grade of first use, trends in use at lower grade levels, and intensity of drug use also are reported. Key attitudes and beliefs about drug use, and perceptions of certain relevant aspects of the social environment are examined as potential explanatory factors.

SURVEYS OF COLLEGE STUDENTS AND YOUNG ADULTS GENERALLY

Data on the prevalence and trends in drug use among young adults who have completed high school are included in this report series. These data are reported primarily in Volume II, although a brief summary of them is given in Chapter 2 of this volume, "Overview of Key Findings." The period of young adulthood (here defined as late teens to early thirties) is particularly important because it has tended to be the period of peak use for many drugs.

The Monitoring the Future study design calls for continuing follow-up panel studies—through age 32—of a subsample of the participants in each participating senior class, beginning with the class of 1976. In 1997, representative samples of the graduating classes of 1983 through 1996, corresponding to modal ages of 19 to 32, provided survey data. Comprehensive results from this young adult population are presented in Volume II.[1]

Two chapters in Volume II present data on college students specifically. Trend data are provided since 1980, the first year that a national sample of college students one to four years past high school was available from the follow-up survey. College students have not usually been well represented in national household surveys, because many college students live on campus in group dwellings (dormitories, fraternities, and sororities) that often are not included in household surveys. (The National Household Survey on Drug Abuse, conducted in earlier years by NIDA and now by the Substance Abuse and Mental Health Services Administration, was revised in 1991 to include such group dwellings.)

CONTENT AREAS COVERED IN THIS REPORT

Initially, eleven separate classes of drugs were distinguished for this series of reports: marijuana (including hashish), inhalants, hallucinogens, cocaine, heroin, opiates other than heroin (both natural and synthetic), stimulants (more specifically, amphetamines), sedatives, tranquilizers, alcohol, and tobacco. This particular organization of drug use classes was chosen to heighten comparability with a parallel series of publications based on the National Household Surveys on Drug Abuse. Separate statistics also are presented for several subclasses of drugs within these more general classes: PCP and LSD (both hallucinogens), barbiturates and methaqualone (both sedatives), the amyl and butyl nitrites (both inhalants), crystal methamphetamine ("ice"), and crack and other cocaine. A number of these drugs appeared on the American scene after the study began and were added to the twelfth-grade questionnaires in subsequent years. Trend data for PCP and nitrites are available since 1979, when questions about the use of these drugs were added to the study because of increasing concern over their rising popularity and possibly deleterious effects. For similar reasons, a single question about crack cocaine was added to the 1986 survey and more detailed questions on crack and other cocaine were added in 1987. Questions about MDMA, or "ecstasy," were added in 1989 to the follow-up surveys only and in 1996 to the eighth-, tenth-, and twelfth-grade surveys. Questions about crystal methamphetamine ("ice") were added in 1990. Barbiturates and methaqualone, two components of the sedatives class as used here, have been measured separately from the outset. Data for them are presented separately because their trend lines are substantially different. Questions about anabolic steroids were added in 1989 because of reports of their increasing illicit use among young people. Questions about smokeless tobacco were added in 1986, while cigarette use has been covered since the study's inception. Questions about "getting drunk" were added in 1991 to the long-standing set of questions on alcohol use. A question about rohypnol was added to the secondary school questionnaires in 1996. A special section on the use of heroin by injection and by means other than injection is contained in the chapter on prevalence, Chapter 4 (Table 4-3); new questions distinguishing these two types of use were introduced in the 1995 survey.

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[1] Older cohorts are now followed up again at ages 35 and 40.

For drugs other than alcohol, cigarettes, smokeless tobacco, inhalants, and nonprescription stimulants, practically all of the information reported here deals with illicit use of controlled substances. Respondents are asked to exclude any occasions on which they used any of the psychotherapeutic drugs under medical supervision. (Some data on the medically supervised use of such drugs are contained in the full 1977, 1978, 1981, and 1983 volumes in this series, and an earlier article discussed trends in the medical use of these drugs.[2])

Throughout this report we have chosen to focus attention on drug use at the higher frequency levels rather than simply report proportions who have ever used various drugs. This is done to help differentiate levels of seriousness, or extent, of drug involvement. While there is no public consensus on what levels or patterns of use constitute "abuse," there is surely a consensus that higher levels of use are more likely to have detrimental effects for the user and society. We have also introduced indirect measures of dosage per occasion, by asking respondents the duration and intensity of the highs they usually experience with each type of drug. Chapter 7 reports those results.

For both licit and illicit drugs, separate chapters are devoted to grade of first use; the students' own attitudes and beliefs; related attitudes, beliefs, and behaviors of others in their social environment; and perceived drug availability. Some of these variables have proven to be very important explanators of observed secular trends in use.

Chapter 10, "Other Findings from the Study," discusses use of nonprescription stimulants, including diet pills, stay-awake pills, and the "look-alike" pseudo-amphetamines. Questions on these substances were placed in the survey beginning in 1982 because the use of them appeared to be on the rise, and because it appeared that some respondents inappropriately included them in their answers about amphetamine use. That inappropriate inclusion affected the observed trends, until the clarification in 1982.

Chapter 10 also presents trend results from a set of questions about cumulative lifetime marijuana use at a daily or near-daily level. These questions were added to enable us to develop a more complete individual history of daily use over a period of years. They reveal some interesting facts about the frequent users of this drug.

This volume also contains an appendix on how to calculate confidence intervals for point estimates and how to calculate statistics testing the significance of changes over time or of differences between subgroups. While many tables in these volumes already contain such statistics for selected point estimates and selected change intervals, some readers may wish to conduct additional tests. Appendix C provides the necessary formulas and design effect corrections to permit that.

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[2] Johnston, L. D., O'Malley, P. M., & Bachman, J. G. (1987). Psychotherapeutic, licit, and illicit use of drugs among adolescents: An epidemiological perspective. *Journal of Adolescent Health Care, 8*, 36-51.

The reader's attention is also called to Appendix D, which presents supplementary tables giving cross-time trends in the use of various drugs for a number of demographic subgroups in the population. Specifically, subgroups are differentiated on the basis of gender, college plans, region of the country, size of the community, education level of the parents (a proxy for socioeconomic status), and racial/ethnic group. The tables document a number of important subgroup differences in both levels of drug use and cross-time trends in drug use.

PURPOSES AND RATIONALE FOR THIS RESEARCH

Perhaps no area has proven more clearly appropriate for the application of systematic research and reporting than the drug field. It has been, and remains, a rapidly changing field. It has great importance for the well-being of the nation, and a large amount of legislative and administrative intervention is addressed to it, particularly in response to the increases in adolescent smoking and illicit drug use we have been reporting in the 1990s.

Young people are often at the leading edge of social change—and this has been particularly true of drug use. The massive upsurge in illicit drug use during the last twenty-five to thirty years has proven to be a youth phenomenon, with the onset of use most likely to occur during adolescence. Young adults in their twenties are also among the age groups at the highest risk for illicit drug use. Indeed, this widespread epidemic really began on the nation's college campuses, although the more recent relapse phase in the epidemic is manifesting itself first among secondary school students. From one year to the next, particular drugs rise or fall in popularity, and related problems occur for youth, their families, governmental agencies, and society as a whole.

One of the major purposes of the Monitoring the Future series is to develop an accurate picture of current drug use and trends. This is a formidable task, given the illicit and illegal nature of most of the phenomena under study. A reasonably accurate picture of the basic size and contours of the illicit drug use problem among young Americans is a prerequisite for rational public debate and policy making. In the absence of reliable *prevalence* data, substantial misconceptions can develop and resources may be misallocated. In the absence of reliable data on *trends*, the early detection and localization of emerging problems are more difficult. In addition, assessments of the impact of major historical and policy-induced events are much more conjectural. Also, the accurate empirical comparison of subgroup differences has challenged conventional wisdom in some important ways.

The study also monitors a number of factors that we believe help to *explain* the changes observed in drug use. Many are discussed in this series of volumes. They include peer norms regarding drugs, beliefs about the dangers of drugs, perceived availability, and so on. In fact, monitoring these factors has made it possible to examine a central policy issue in this nation's war on drugs—namely, the relative importance of supply factors vs. demand factors in bringing about some of the observed declines (and more recently, increases) in drug use. We also have developed a general theory of drug epidemics that makes use of many of these concepts to explain the rises and falls in use that occur.[3]

In addition to accurately assessing prevalence and trends and trying to determine the causes of them, the Monitoring the Future study has other important research objectives. Among these are: helping to determine which young people are at the greatest risk for developing various patterns of drug abuse; gaining a better understanding of the lifestyles and value orientations associated with various patterns of drug use, and monitoring how those orientations are shifting over time; determining the immediate and more general aspects of the social environment associated with drug use and abuse; determining how major transitions in social environment (entry into military service, civilian employment, college, homemaking, and unemployment) or in social roles (engagement, marriage, pregnancy, parenthood, divorce, and remarriage) affect drug use; determining the life course of the various drug-using behaviors from early adolescence to middle adulthood; distinguishing such "age effects" from cohort and period effects in determining drug use; evaluating possible explanations of period and age effects, including determining the effects of social legislation on various types of substance use; and, determining the changing connotations of drug use and changing patterns of multiple drug use among youth. We believe that the differentiation of period, age, and cohort effects in substance use of various types has been a particularly important contribution of the project; and it is one that the project's cohort-sequential research design is especially well-suited to make.[4] Readers interested in publications dealing with any of these other areas should write the authors at the Institute for Social Research, The University of Michigan, Ann Arbor, Michigan, 48106-1248. Up-to-date information about the study, and copies of the most recent press releases from it, may be found on the Monitoring the Future web site at: www.isr.umich.edu/src/mtf .

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[3] See Johnston, L.D. (1991). Toward a theory of drug epidemics. *In* R.L. Donohew, H. Sypher, & W. Bukoski (Eds.), *Persuasive communication and drug abuse prevention* (pp. 93-132). Hillsdale, NJ: Lawrence Erlbaum.

[4] For an elaboration and discussion of the full range of objectives of this research in the domain of substance abuse, see Johnston, L.D., O'Malley, P.M., Bachman, J.G., and Schulenberg, J. (1994). *The aims and objectives of the Monitoring the Future study and progress toward fulfilling them.* (Monitoring the Future Occasional Paper 34). Ann Arbor, MI: Institute for Social Research.

Chapter 2

OVERVIEW OF KEY FINDINGS

Volumes I and II of this monograph report the findings through 1997 of the ongoing research and reporting series entitled Monitoring the Future: A Continuing Study of the Lifestyles and Values of Youth. Over its twenty-three year existence, the study has consisted of in-school surveys of nationally representative samples of (a) high school seniors each year since 1975 and (b) eighth and tenth grade students each year since 1991. In addition, beginning with the Class of 1976, follow-up surveys have been conducted by mail on representative subsamples of the respondents from each previously participating twelfth grade class.

Volume I of this report presents findings on the prevalence and trends in drug use and related factors for secondary school students (eighth, tenth, and twelfth graders); Volume II presents the comparable results for young adult high school graduates 19-32 years old, as well as college students specifically. Trend data are presented for varying time intervals, covering up to a twenty-two year interval in the case of the twelfth graders. For college students, a particularly important subset of the young adult population, for which very little nationally representative data exists, we present detailed prevalence and trend results covering a seventeen year interval (since 1980).

The high school dropout segment of these populations—about 15%-20% of an age group by the end of senior year—is of necessity omitted from the coverage, though this omission should have a negligible effect on the coverage of college students. Appendix A of Volume I discusses the likely impact of omitting dropouts from the sample coverage at twelfth grade. Very few students will have left school by eighth grade, of course, and relatively few by the end of tenth grade, so the results of the school surveys at those levels should be generalizable to the great majority of the relevant age cohorts.

A number of important findings emerge from these five national populations—eighth grade students, tenth grade students, twelfth grade students, college students, and all young adults through age 32 who are high school graduates. They have been summarized and integrated in this chapter so that the reader may quickly get an overview of the key results. Because so many populations, drugs, and prevalence intervals are discussed here, a single integrative table (Table 2-1) showing the 1991-1997 trends for all drugs on all five populations is included in this chapter.

TRENDS IN ILLICIT DRUG USE

- In the last several volumes in this series we have noted an increase in the use of a number of illicit drugs among the secondary students and some important reversals among them in terms of certain key attitudes and beliefs. In the volume reporting 1992 survey results, we noted the beginning of such reversals in both use and attitudes among eighth graders, the youngest respondents surveyed in this study, and also a reversal in attitudes among the twelfth graders. Specifically, the proportions seeing great risk in using drugs began to decline as did the proportions saying they disapproved of use. As predicted earlier, those reversals indeed presaged ". . . an end to the improvements in the drug situation that the nation may be taking for granted." The use of illicit drugs rose sharply in all three grade levels after 1992, as negative attitudes and beliefs about drug use continued to erode. This pattern continued for some years. In 1997, for the first time in six years, the use of marijuana and a number of other drugs did not increase among eighth graders. Use of marijuana still may be rising among tenth and twelfth graders; however, their use of a number of other drugs appears to have leveled off. Attitudes and beliefs also began to reverse in many cases.

- Until this year, ***marijuana*** use rose sharply among secondary school students and their use of a number of ***other illicit drugs*** rose more gradually. The increase in marijuana use also began to show up among American college students, no doubt due in large part to "generational replacement," wherein earlier graduating high school class cohorts are being replaced in the college population by more recent ones who were more drug experienced even before they left high school. A resurgence in illicit drug use spreading up the age spectrum is a reversal of the way the epidemic spread several decades earlier. In the 1960s the epidemic began on the nation's college campuses, and then the behavior diffused downward in age to high school students and eventually to junior high school students.

  At present there still is rather little increase in illicit drug use in the young adult population, 19-28 years old, taken as a whole. In fact, from 1991 through 1996, the use of illicit drugs other than marijuana (taken as a class) declined among young adults at the same time as adolescent use rose. This decline in young adult use ended in 1997, and we predict that generational replacement will begin to move the numbers up for this group, as well.

  These diverging trends across the different age groups show that changes during the 1990s reflect some cohort effects—lasting differences between class cohorts—rather than broad secular trends, which have characterized most of the previous years covered by the study. Typically, use has moved in parallel across most age groups.

- A parallel finding occurred for ***cigarette*** smoking, as well, in that college students showed a sharp increase in smoking, beginning in 1995, no doubt reflecting a generational replacement effect. (Smoking has been rising among high school seniors since 1992.) This has been a more typical pattern of change for ***cigarettes***, since differences in cigarette smoking rates among class cohorts tend to remain through much or all of the life cycle and also tend to account for much of the change in use which is observed at any given age. Whatever the cause, the continuing increase in 1996 and 1997 in cigarette smoking among college students is noteworthy.

- In 1997, ***marijuana*** use, which had been rising sharply in all three grades of secondary school, leveled for eighth graders and decelerated for tenth and twelfth graders. In the 1990s, the annual use of marijuana (i.e., percentages reporting any use during the prior twelve months) nearly tripled among eighth graders (from 6% in 1991 to 18% in 1997), more than doubled among tenth graders (from 15% in 1992 to 35% in 1997), and grew by nearly 80% among twelfth graders (from 22% in 1992 to 39% in 1997). Among college students, however, the increase in marijuana use, presumably due to a "generational replacement effect," was much more gradual. Annual prevalence rose by about one-quarter from 27% in 1991 to 33% in 1996, before leveling. Among young adults there was less change, from 24% in 1991 to 27% in 1996, with prevalence leveling thereafter.

  Daily marijuana use rose substantially among secondary school and college students since 1992, but somewhat less so among young adults (Table 2-1c). More than one in twenty (5.8%) twelfth graders are now current daily marijuana users. Still, this rate is far below the 10.7% peak figure reached in 1978. Daily use among eighth graders decreased significantly in 1997, for the first time in the 1990s. It had risen steadily from 0.2% in 1992 to 1.5% in 1996, before falling to 1.1% in 1997.

  The critical variables of perceived risk and disapproval had been falling sharply for marijuana in all grades between 1992 and 1994. (The declines in perceived risk actually started at least a year earlier for eighth and tenth graders.) In virtually all cases, however, the steep downward slope in these trend lines was moderated in 1995. (This coincided with the launching of the anti-marijuana ad campaign in January 1995, by the Partnership for a Drug Free America.)

- Among seniors, the proportions using ***any illicit drug other than marijuana*** in the past year rose to 21% in 1997, from a low of 15% in 1992; it is still substantially below the 34% peak rate in 1981. There has been very little change for young adults since 1991 on this measure (Table 2-1b). All of the younger groups have shown significant increases but not as large in proportional terms as was true for marijuana. Use of any illicit drug other than marijuana began to increase in 1992 among eighth graders, in 1993 among tenth and twelfth graders, and in 1995 among college students. By 1997, eighth graders started to show a decline on this measure, and use among tenth graders leveled.

- Between 1989 and 1992 we noted an increase among college students and young adults in the use of ***LSD***, a drug most popular in the late 1960s and early 1970s. In 1992, all five populations showed an increase in annual prevalence of LSD; for four subsequent years, modest increases persisted among the secondary school students. Use of LSD in all three grades leveled in 1997. Use of LSD among college students in 1997 is about where it was in 1991.

Prior to the significant increase in LSD use among seniors in 1993, there was a significant 4.3 percentage point decline in the proportion seeing great risk associated with trying LSD. Some further decline in this belief continued through 1997. The proportion of seniors disapproving LSD also began to decline in 1992 and continued through 1996, halting in 1997.

Because LSD was one of the earliest drugs to be popularly used in the overall American drug epidemic, there is a distinct possibility that young people—particularly the youngest cohorts, like the eighth graders—are not as concerned about the risks of use. They have had less opportunity to learn vicariously about the consequences of use by observing others around them, or to learn from intense media coverage of the issue. This type of "generational forgetting" of the dangers of a drug, which occurs as a result of generational replacement, could set the stage for a whole new epidemic of use. In fact, perceived harmfulness of LSD began to decline after 1991 among seniors. These measures for risk and disapproval were first introduced for eighth and tenth graders in 1993 and both measures had been dropping until 1997 when perceived risk and disapproval leveled.

- The use of prescription-controlled ***stimulants***—one of the most widely used classes of drugs taken illicitly (i.e., outside of medical regimen)—increased by about half among eighth and tenth graders between 1991 and 1996. In 1997, use declined significantly among eighth graders and leveled among tenth graders, but among twelfth graders, use continued to increase.

  Annual prevalence rates for the use of stimulants among seniors fell substantially, from 20% in 1982 to 7% in 1992; rates among college students fell over the same interval, from 21% to 4%. The increase in use of illicit stimulants (and a decrease in disapproval) began among seniors in 1993, following a sharp drop in perceived risk a year earlier (which often serves as an early warning signal). Following a period of decline, disapproval of and perceived risk for stimulants stabilized in 1997 among seniors, while use showed a slight rise. This pattern of change is consistent with our theoretical position that perceived risk can drive both disapproval and use.

  College students have shown some modest increase in stimulant use during the 1990s but the absolute prevalence rates are now only about half those for tenth and twelfth graders.

- The ***inhalants*** constitute another class of abusable substances where a troublesome increase was followed by a recent reversal among secondary school students—this time after 1995. Inhalants are defined as fumes or gases that are inhaled to get high, including common household substances such as glues, aerosols, butane, and solvents. One class of inhalants, ***amyl and butyl nitrites***, became somewhat popular in the late 1970s, but their use has been almost eliminated. For example, their annual prevalence rate among twelfth-grade students was 6.5% in 1979 but only 1.2% in 1997.

When the nitrites are removed from consideration it appears that all other inhalants taken together showed an upward trend in annual use until 1995. It is worth noting that, largely as a result of the findings from the Monitoring the Future survey reporting the rise in inhalant use, the Partnership for a Drug Free America launched an anti-inhalant ad campaign in mid-April of 1995. By the 1996 spring survey of eighth and tenth graders (twelfth graders are not asked about the dangers of inhalants) there was a sharp increase (of three to six percentage points, depending on the measure) in the percent who said that using inhalants carries great risk to the user. Inhalant use in all grades began to decline in 1996, and continued declining in 1997, after a long and steady increase in the preceding years. This is all the more noteworthy because illicit drug use generally was still increasing in 1996 and (for the upper two grades) in 1997 as well.

Some 12% of the 1997 eighth graders and 9% of the tenth graders indicated use in the prior 12 months, making inhalants the second most widely used class of illicitly used drugs for eighth graders (after marijuana) and the third most widely used (after marijuana and stimulants) for the tenth graders. Inhalants can and do cause death, and tragically, this often occurs among youngsters in their early teens. Because the use of inhalants decreases with age, the college student and the young adult populations have the lowest rates of use (annual prevalence of 4% and 2%, respectively, in 1997).

- Among high school seniors, the overall prevalence of ***crack*** cocaine leveled in 1987 at relatively low prevalence rates (3.9% annual prevalence), even though crack use continued to spread to new communities. Annual prevalence dropped sharply in the next few years, reaching 1.5% by 1991, where it remained through 1993. Then it rose gradually to 2.4% by 1997.

  Among eighth and tenth graders, crack use rose gradually in the early 1990s: from 0.7% in 1991 to 1.8% by 1996 among eighth graders, and from 0.9% in 1992 to 2.1% in 1996 among tenth graders. There was no further change in either grade in 1997. In contrast, among young adults one to ten years past high school, annual prevalence was 1.0% in 1997, relatively unchanged since 1991. Nor was there much change in the low rates of crack use among college students during the 1990s.

  Among seniors, annual crack prevalence among the college-bound is considerably lower than among those not bound for college (1.7% for college-bound vs. 4.3% for noncollege-bound, in 1997).

We believe that the particularly intense and early media coverage of the hazards of crack cocaine likely had the effect of "capping" an epidemic early, by deterring many would-be users and by motivating many experimenters to desist use. When we first measured crack use in 1987, we found that it had the highest level of perceived risk of any of the illicit drugs. While 3.9% of seniors in 1997report ever having tried crack, only 0.9% report use in the past month, indicating that 77% of those who tried crack did not establish a pattern of continued frequent use.

Although crack use did not increase in 1993, perceived risk and disapproval dropped in all three grade levels, predicting the modest rise in use in all three grades between 1994 and 1996.

- ***Cocaine***[5] in general began to decline a year earlier than crack, probably because crack was still diffusing to new parts of the country. Between 1986 and 1987 the annual prevalence rate dropped dramatically, by roughly one fifth in all three populations then studied—seniors, college students, and young adults. The decline occurred when young people began to view experimental and occasional use—the type of use in which they are most likely to engage—as more dangerous. This change had occurred by 1987, probably partly because the hazards of cocaine use received extensive media coverage in the preceding year, but almost surely in part because of the highly-publicized cocaine-related deaths in 1986 of sports stars Len Bias and Don Rogers. By 1992, annual prevalence of cocaine use had fallen by about two-thirds among the three populations for which long-term data are available (twelfth graders, college students, and young adults).

In 1993, cocaine use remained stable among secondary students but continued to decline among college students and young adults through 1994. From 1994 through 1996, annual use rose among eighth, tenth, and twelfth graders and college students, but remained stable among young adults. All groups except eighth graders showed some continued upward drift in 1997.

Again, the story regarding attitudes and beliefs is informative. Having risen substantially since 1986, the perceived risk of using cocaine actually showed some (nonsignificant) decline in 1992 among seniors. In 1993, perceived risk for cocaine other than crack fell sharply in all grades and disapproval began to decline in all grades, though not as sharply as perceived risk. In 1997, perceived risk leveled in all three grades. While disapproval continued its decline among tenth and twelfth graders, it began to increase among eighth graders. These recent changes may foretell a leveling of use in the upper age group, as has happened already among eighth graders.

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[5] Unless otherwise specified, all references to "cocaine" refer to the use of cocaine in any form, including crack.

Through 1989, there was no decline in perceived availability of cocaine among twelfth graders; in fact, it rose steadily from 1983 to 1989, suggesting that availability played no role in bringing about the substantial downturn in use. After 1989, however, perceived availability fell some among seniors; the decline may be explained by the greatly reduced proportions of seniors who say they have any friends who use, because friendship circles are an important part of the supply system. Since 1992 there has been rather little change in eighth and tenth grade reports of availability of powder cocaine. Among seniors, reported availability declined from 1992 to 1994, before leveling.

As with all the illicit drugs, lifetime cocaine prevalence climbs with age, exceeding 18% by age 28. Unlike all of the other illicit drugs, active use of cocaine—i.e., annual prevalence or monthly prevalence—also climbs after high school.

- ***PCP*** use fell sharply among high school seniors between 1979 and 1982, from an annual prevalence of 7.0% to 2.2%. It reached a low point of 1.2% in 1988 and stands at 2.3% in 1997. For the young adults, the annual prevalence rate is now only 0.5% (although this is the highest rate it has reached in the 1990s).

- The annual prevalence of ***heroin*** use among twelfth graders fell by half between 1975 (1.0%) and 1979 (0.5%). It then stabilized for some fifteen years until 1994 (0.6%), before rising significantly to 1.1% in 1995. There has been little change since then (1.2% in 1997). Among young adults and college students, heroin statistics also were quite stable at low rates (about 0.1% to 0.2%) through 1994, followed by the first increase in 1995, again with little change since.

  Eighth and tenth graders showed an increase in heroin use from 1993 through 1996. Then, eighth graders' use of heroin decreased significantly to 1.3% in 1997, while tenth graders' use leveled. Their annual prevalence rates are roughly double what they were in the early 1990s. Two factors that very likely contributed to the upturn in heroin use in the 1990s are: (1) a long-term decline in the perceived dangers of heroin due to "generational forgetting" (the last major heroin epidemic occurred around 1970), and (2) the fact that in recent years heroin could be used without injection, thus lowering an important psychological barrier for many potential users by making heroin seem safer and perhaps less addictive. Using some new questions on heroin use introduced in 1995, we are able to show that significant proportions of past-year users in grades eight, ten, and twelve, are indeed taking heroin by means other than injection. (See Chapter 4 for details.)

  The risk perceived to be associated with heroin fell for more than a decade after the study began, with 60% of the 1975 seniors seeing a great risk of trying heroin once or twice and only 46% of the 1986 seniors saying the same. Since the last major heroin epidemic occurred around 1970, we view this steady decline in perceived risk as a case of "generational forgetting" of the drug's dangers. Between 1986 and 1991 perceived risk rose some, from 46% to 55%, undoubtedly reflecting the newly recognized threat of HIV infection associated with heroin injection. After 1991, however, perceived risk fell again (to 51% by 1995), this time perhaps reflecting the fact that the newer heroin available on the street could be administered by methods other than injection because it was so much more pure. In 1996, perceived risk among seniors began to rise once again, and then rose sharply by 1997—this time perhaps as the result of an anti-heroin campaign launched by the Partnership for a Drug Free America in June 1996, as well as the visibility of heroin-related deaths of some celebrities in the entertainment and fashion design worlds.

Questions about the degree of risk perceived to be associated with heroin use were first introduced into the questionnaires for eighth and tenth graders in 1995, and they asked specifically about use "without using a needle," because we thought this was the form of heroin use of greatest concern at that point. (Similar questions were asked of twelfth graders, as well, in one of the six questionnaire forms.) In general, perceived risk in both eighth and tenth grades rose modestly in 1996 and more sharply in 1997. Among twelfth graders, perceived risk of using heroin without a needle also rose in both years.

- The use of ***opiates other than heroin*** had been fairly level over most of the life of the study. Seniors had an annual prevalence rate of 4% to 6% from 1975 to 1990. In 1991, however, a significant decline (from 4.5% to 3.5%) was observed. Use stayed at this level for a few years, before increasing significantly from 3.6% in 1993 to 6.2% by 1997. Young adults in their twenties generally showed a very gradual decline from 3.1% in 1986 to 2.5% in 1993; college students likewise showed a slow decrease, from 3.8% between 1982 and 1984 to 2.2% in 1993. Over the last four years, however, the young adults have shown a modest increase, to 3.3% in 1997. (Data are not reported for eighth and tenth graders because we believe younger students are not accurately discriminating among the drugs that should be included or excluded from this class.)

- A long, substantial decline, which began in 1977, occurred for ***tranquilizer*** use among high school seniors. By 1992, annual prevalence reached 2.8%, down from 11% in 1977. Since 1992, use has increased modestly, reaching 4.7% in 1997. Reported tranquilizer use also exhibited some recent, modest increase among eighth graders, from 1.8% in 1991 to 3.3% in 1996, before declining to 2.9% in 1997. Among tenth graders, annual prevalence remained stable between 1991 and 1994, at around 3.3%, and then increased significantly to 4.6% by 1996. After a period of stability, college students also showed some increase between 1994 and 1997. For the young adult sample, annual prevalence has been quite stable in recent years, after a long period of decline.

- The long-term gradual decline in ***barbiturate*** use, which began at least as early as 1975, when the study began, halted in 1988. Annual prevalence among seniors had fallen by more than two-thirds, from 10.7% in 1975 to 3.2% in 1988. It then hovered around 3.4% through 1991 before dropping further to 2.8% by 1992. Use then rose steadily to 5.1% in 1997. The 1997 annual prevalence of this class of sedative drugs is lower among young adults (2.4%) and college students (3.0%). Use among college students began to rise a couple of years later than it did among twelfth graders, no doubt reflecting the impact of generational replacement. Use has increased only slightly so far among young adults. (Data are not included here for eighth and tenth grades, because we believe the younger students have more problems with the proper classification of the relevant drugs.)

- ***Methaqualone***, another sedative drug, has shown quite a different trend pattern than barbiturates. Its use rose steadily among seniors from 1975 to 1981, when annual prevalence reached 8%. Its use then fell very sharply, declining to 0.2% by 1993, before rising significantly to 1.1% by 1996, where it has leveled. Use also fell among all young adults and among college students, who had annual prevalence rates of only 0.3% and 0.2%, respectively, by 1989—the last year they were asked about this drug. In the late 1980s, shrinking availability may well have played a role in this drop, as legal manufacture and distribution of the drug ceased. Because of its very low usage rates, only the seniors are now asked about use of this drug.

- In sum, five classes of illicitly used drugs, ***marijuana***, ***cocaine***, ***stimulants***, ***LSD***, and ***inhalants*** have had an impact on appreciable proportions of young Americans in their late teens and twenties. In 1997, high school seniors showed annual prevalence rates of 39%, 6%, 10%, 8%, and 7%, respectively. Among college students in 1997, the comparable annual prevalence rates are 32%, 3%, 6%, 5%, and 4%; and for all high school graduates one to ten years past high school (young adults) the rates are 27%, 5%, 5%, 4%, and 2%. It is worth noting that LSD has climbed in the rankings because its use has not declined, and in some cases has increased, during a period in which use of cocaine, amphetamines, and other drugs declined appreciably. The inhalants have become more important in relative terms for similar reasons.

  Clearly, cocaine is relatively more important in the older age group and inhalants are relatively more important in the younger ones. In fact, in eighth grade inhalants are second to marijuana as the most widely used of the illicit drugs.

  Because of their importance among the younger adolescents, a new index of illicit drug use including inhalants was introduced in Table 2-1 in recent years. Certainly the use of inhalants reflects a form of illicit, psychoactive drug use; its inclusion makes relatively little difference in the illicit drug index prevalence rates for the older age groups, but considerable difference for the younger ones. For example, the proportion of eighth graders reporting any illicit drug used in their lifetime, exclusive of inhalants, in 1997 was 29%, whereas including inhalants raises the figure to 38%.

- The annual prevalence among twelfth graders of over-the-counter ***stay-awake pills***, which usually contain caffeine as their active ingredient, nearly doubled between 1982 and 1990, increasing from 12% to 23%. Since 1990 this statistic has fallen slightly to 20% in 1997. Earlier decreases also occurred among the college-age young adult population (ages 19-22), where annual prevalence was 26% in 1989, but it is now down to 19% in 1997.

  The other two classes of nonprescription stimulants—the ***look-alikes*** and the over-the-counter ***diet pills***—also showed some fall-off in annual use among both seniors and young adults in recent years, though use of diet pills among seniors rose from 1994 to 1997 and among young adults from 1995 to 1997. Among seniors in 1997, some 25% of the females had tried diet pills by the end of senior year, 15% have used them in the past year, and 7% had used them in just the past month.

College-Noncollege Differences in Illicit Drug Use

- American college students (defined here as those respondents one to four years past high school who were actively enrolled full-time in a two- or four-year college) show annual usage rates for several categories of drugs which are about average for their age group; these categories include ***any illicit drug***, ***marijuana*** specifically, ***inhalants***, and ***opiates other than heroin***. For several other categories of drugs, however, college students have rates of use that are below those of their age peers, including ***any illicit drug other than marijuana***, ***hallucinogens***, ***LSD*** specifically, ***cocaine***, ***crack cocaine*** specifically, ***heroin***, ***MDMA*** (ecstasy), ***stimulants***, ***ice***, and ***barbiturates***.

  Because college-bound seniors had below average rates of use on all of these illicit drugs while they were in high school, the eventual attainment of parity on many of them reflects some closure of the gap. As results from the study published elsewhere have shown, this college effect of "catching up" is largely explainable in terms of differential rates of leaving the parental home after high school graduation, and of getting married. College students are more likely than their age peers to have left the parental home and its constraining influences and less likely to have entered marriage, with its constraining influences.

- In general, the trends since 1980 in illicit substance use among American college students have paralleled those of their age peers not in college. Most drugs showed a period of substantial decline in use some time after

1980. Further, all young adult high school graduates through age 28, as well as college students taken separately, showed trends which were highly parallel for the most part to the trends among high school seniors up until about 1992. After 1992, a number of drugs showed an increase in use among seniors (as well as eighth and tenth graders), but not among college students and young adults. This divergence, combined with the fact that the upturn began first among the eighth graders (in 1992), suggests that cohort effects are emerging for illicit drug use. In fact, as those heavier-using cohorts of high school seniors enter the college years, we are beginning to see a lagged increase in the use of a number of drugs in college. For example, annual prevalence reached a low point among twelfth graders in 1992 for a number of drugs (e.g. ***cocaine, stimulants, barbiturates, tranquilizers, other opiates,*** *and* ***any illicit drug other than marijuana***) before rising thereafter; among college students, those same drugs reached a low two years later in 1994, and then began to rise gradually.

Male-Female Differences in Illicit Drug Use

- Regarding gender differences in three older populations (seniors, college students, and young adults), males are more likely to use *most illicit drugs*, and the differences tend to be largest at the higher frequency levels. ***Daily marijuana use*** among high school seniors in 1997, for example, is reported by 8.1% of males vs. 3.1% of females; among all adults (19-32 years) by 4.8% of males vs. 2.5% of females; and among college students, specifically, by 5.7% of males vs. 2.3% of females. The only consistent exception to the rule that males are more frequent users of illicit drugs than females occurs for ***stimulant*** use in high school, where females usually are at the same level as males or slightly higher.

- In the eighth and tenth grade samples there are fewer gender differences in the use of drugs—perhaps because girls tend to date and emulate older boys, who are in age groups considerably more likely to use drugs. There is little male-female difference in eighth and tenth grades in the use of ***cocaine*** and ***crack***. ***Stimulant*** use is slightly higher among females.

TRENDS IN ALCOHOL USE

- Several findings about ***alcohol*** use in these age groups are noteworthy. First, despite the fact that it is illegal for virtually all secondary school students and most college students to purchase alcoholic beverages, experience with alcohol is almost universal among them. That is, alcohol has been tried by 54% of eighth graders, 72% of tenth graders, 82% of twelfth graders, and 87% of college students; and active use is widespread. Most important, perhaps, is the widespread occurrence of ***occasions of heavy drinking***—measured by the percent reporting five or more drinks in a row at least once in the prior two-week period.

Among eighth graders this statistic stands at 15%, among tenth graders at 25%, among twelfth graders at 31%, and among college students at 41%. After the early twenties this behavior recedes somewhat, reflected by the 32% found in the entire young adult sample.

- Alcohol use did not increase as use of other illicit drugs decreased among seniors from the late 1970s to the early 1990s, although it was common to hear such a "displacement hypothesis" asserted. This study demonstrates that the opposite seems to be true. After 1980, when illicit drug use was declining, the monthly prevalence of alcohol use among seniors also declined gradually, from 72% in 1980 to 51% in 1993. ***Daily use*** declined from a peak of 6.9% in 1979 to 2.5% in 1993; and the prevalence of drinking ***five or more drinks in a row*** (binge drinking) during the prior two-week interval fell from 41% in 1983 to 28% in 1993—nearly a one-third decline. Now that illicit drug use is rising again in the 1990s, there is evidence that alcohol use (particularly binge drinking) may, if anything, be starting to increase as well—albeit not as sharply as marijuana use.

College-Noncollege Differences in Alcohol Use

- The data from college students show a quite different pattern in relation to alcohol use than twelfth graders or noncollege-bound respondents of the same age. They show less drop-off in monthly prevalence since 1980 (82% to 66% in 1997, the recent low) and slightly less decline in ***daily use*** (6.5% in 1980 to 3.0% in 1995, the recent low). There has also been little change in ***occasions of heavy drinking***, which remained stable from 1980 (44%) through 1988 (43%) then decreased slightly through 1996 (to 38%, the recent low). This is now considerably higher than the 31% observed in 1997 among high school seniors. Because both their noncollege-age peers and high school students have been showing a net decrease in occasions of heavy drinking since 1980, the college students stand out as having maintained a very high rate of binge or party drinking. Since the college-bound seniors in high school are consistently less likely to report occasions of heavy drinking than the noncollege-bound, this indicates that they "catch up to and pass" their peers in binge drinking after they leave high school and attend college. In 1997, college students showed a small (non-significant) increase in binge drinking, as did their age-peers not in college and high school seniors.

- In most years from 1980 onward, college students have had a ***daily drinking*** rate that was slightly lower than their age peers, suggesting that they were more likely to confine their drinking to weekends, when they tend to drink a lot. College men have much higher rates of daily drinking than college women: 7.8% vs. 2.1% in 1997.

- The rate of daily drinking has fallen considerably among the noncollege group, from 8.7% in 1981 to 5.0% in 1997. In 1997, college males had a slightly higher binge drinking rate than noncollege males the same age.

Male-Female Differences in Alcohol Use

- There is a substantial gender difference among high school seniors in the prevalence of ***occasions of heavy drinking*** (24% for females vs. 38% for males in 1997); this difference generally had been diminishing very gradually since the study began.

- As was just discussed, there also are substantial gender differences in alcohol use among college students, and young adults generally, with males drinking more. For example, 51% of college males report having ***five or more drinks in a row*** over the previous two weeks vs. 33% of college females. There has not been a great deal of change in this gender difference since 1980.

TRENDS IN CIGARETTE SMOKING

- A number of important findings about ***cigarette smoking*** among American adolescents and young adults have emerged from the study. Despite the demonstrated health risks associated with smoking, sizeable and growing proportions of young people continue to establish regular cigarette habits during late adolescence. In fact, since the study began in 1975, cigarettes have consistently comprised the class of abusable substance most frequently used on a daily basis by high school students.

- Through the 1990s until 1997, we have been in a period of clear and continuing increase in cigarette smoking among teens. Twelfth graders showed an increase in smoking which began in 1992 and still continues, while eighth and tenth graders showed a steady increase between 1991 (when they were first surveyed) and 1996. In 1997, use decreased slightly among the eighth graders and appeared to level among the tenth graders. The rates of current smoking—that is, smoking any cigarettes in the prior 30 days—rose by about half between 1991 and 1996 among eighth graders (from 14% to 21%) and tenth graders (from 21% to 30%). Among seniors, the current smoking rate has risen nearly one-third since 1992, from 28% to 37% in 1997, and the rate is still rising. ***Daily smoking*** rates also have increased by about half among eighth graders (from a low of 7.0% in 1992 to 10.4% in 1996) and tenth graders (from a low of 12.3% in 1992 to 18.3% in 1996), while daily smoking among twelfth graders has increased by 43% (from a low of 17.2% in 1992 to 24.6% in 1997) and is still rising. In 1997, we saw the first evidence of a change in the situation, as smoking rates declined among eighth graders and leveled among tenth graders.

- For seniors, the upturn in the 1990s follows a substantial decline in smoking during a much earlier period, from 1977 to 1981; a leveling for nearly a decade (through 1990); and a slight decline in 1991 and 1992.

- The dangers perceived to be associated with pack-a-day smoking differ greatly by grade level and seem to be unrealistically low at all grade levels. Only about two-thirds of the seniors (69%) report that pack-a-day smokers run a great risk of harming themselves: more importantly, only about half (53%) of the eighth graders say the same. All three grades showed a dip in perceived risk between 1993 and 1995, but a comparable increase between 1995 and 1997. Disapproval of cigarette smoking had been in decline longer: from 1991 through 1996 among eighth and tenth graders, and from 1992 to 1996 among twelfth graders. In 1997, eighth and tenth graders' disapproval increased significantly, and there was no further decline in the disapproved rate among twelfth graders. Undoubtedly the heavy media coverage of the tobacco issue has begun to influence these attitudes.

Age and Cohort-Related Differences in Cigarette Smoking

- Initiation of daily smoking most often occurs in grades 6 through 9 (i.e., at modal ages 11-12 to 14-15), with rather little further initiation after high school, although a number of light smokers make the transition to heavy smoking in the first two years after high school. Analyses presented in this volume and elsewhere have shown that cigarette smoking shows a clear "cohort effect." That is, if a class (or birth) cohort establishes an unusually high rate of smoking at an early age relative to other cohorts, it is likely to remain high throughout the life cycle.

- As we reported in the "Other Findings from the Study" chapter in the 1986 volume in this series, some 53% of the half-pack-a-day (or more) smokers in senior year said that they had tried to quit smoking and found they could not. Of those who had been daily smokers in twelfth grade, nearly three-quarters were daily smokers 7 to 9 years later (based on the 1985 follow-up survey), despite the fact that in high school only 5% of them thought they would "definitely" be smoking 5 years hence. A more recent analysis, based on the 1995 follow-up survey, showed similar results. Nearly two-thirds (63%) of those who had been daily smokers in the twelfth grade still were daily smokers 7 to 9 years later, although only 3% of them had thought they would "definitely not" be smoking 5 years hence. Clearly, the smoking habit is established at an early age; it is difficult to break for those young people who have it; and young people greatly overrate their own ability to quit. Additional data from the eighth and tenth grade students show us that younger children are even more likely than older ones to underestimate the dangers of smoking.

- The surveys of eighth and tenth graders also show that cigarettes are almost universally available to teens. Three-quarters (76%) of eighth graders and 90% of tenth graders say that cigarettes are "fairly easy" or "very easy" for them to get, if they want them; and there has been little change in reported availability since these questions were first asked in 1992.

College-Noncollege Differences in Cigarette Smoking

- A striking difference in smoking rates exists between college-bound and noncollege-bound high school seniors. For example, smoking half-pack or more per day is two and one-half times as prevalent among the noncollege-bound seniors (24% vs. 11%). Among respondents one to four years past high school, those not in college show the same dramatically higher rate of smoking compared to that found among those who are in college, with half-pack-a-day smoking standing at 22% and 9%, respectively.

Male-Female Differences in Cigarette Smoking

- In the 1970s, among high school seniors, females caught up to, and passed, males in their rates of ***current smoking***. Both genders then showed a decline in use followed by a long, fairly level period, with use by females consistently higher. In the early 1990s there was another crossover—rates rose among males and declined among females. Both genders have shown increasing use since 1992.

  Similarly, among college students, females had slightly higher probabilities of being daily smokers, from 1980 through 1994—although this long-standing gender difference was not true among their age peers not in college. However, since 1995, smoking rates among college males has tended to be sightly higher than among females.

RACIAL/ETHNIC COMPARISONS

The three largest ethnic groupings—whites, African Americans, and Hispanics taken as a group—are examined here. (Sample size limitations simply do not allow finer subgroup breakdowns unless many years are combined.) A number of interesting findings emerge in these comparisons, and the reader is referred to Chapters 4 and 5 of Volume I for a full discussion of them.

- African American seniors have consistently shown lower usage rates on most drugs, licit and illicit, than white seniors; this also is true at the lower grade levels where little dropping out of school has occurred. In some cases, the differences are quite large.

- African American students have a much lower prevalence of ***daily cigarette smoking*** than white students (7% vs. 28% in senior year, in 1997) because their smoking rate continued to decline after 1983, while the rate for white students stabilized for some years. (Smoking rates have been rising among white seniors since 1992 and among African American seniors since 1994.)

- In twelfth grade, ***binge drinking*** is much less likely to be reported by African American students (13%) than by white students (35%), or Hispanic students (28%).

- In twelfth grade, of the three racial/ethnic groups, whites have the highest rates of use on a number of drugs, including ***marijuana, inhalants, hallucinogens, LSD*** specifically, ***barbiturates, amphetamines, tranquilizers, opiates other than heroin***, ***alcohol***, ***cigarettes***, and ***smokeless tobacco***.

- However, in senior year, Hispanics have the highest usage rate for a number of the most dangerous drugs: ***cocaine, crack, other cocaine***, and in 1994-1996 ***heroin*** use. Further, in eighth grade, Hispanics have the highest rates not only on these drugs, but on many of the others, as well. For example, in eighth grade, the annual prevalence of ***marijuana*** for Hispanics is 22%, vs. 18% for whites and 15% for African Americans; for ***binge drinking***, 21%, 15%, and 10%, respectively. In other words, Hispanics have the highest rates of use for many drugs in eighth grade, but not in twelfth, which suggests that their considerably higher dropout rate (compared to whites and African Americans) may change their relative ranking by twelfth grade.

- With regard to trends, seniors in all three racial/ethnic groups exhibited the decline in ***cocaine*** use from 1986 through 1992, although the decline was less steep among African American seniors because the earlier increase in use was not as large as that among white and Hispanic students.

- For virtually ***all of the illicit drugs***, the three groups have tended to trend in parallel. Because white seniors had achieved the highest level of use on a number of drugs—including ***stimulants, barbiturates,*** and ***tranquilizers***—they also had the largest declines; African Americans have had the lowest rates, and therefore, the smallest declines.

- The important racial/ethnic differences in ***cigarette smoking*** noted earlier among seniors have emerged during the life of the study. The three groups were fairly similar in their smoking rates during the late 1970s and all three mirrored the general decline in smoking from 1977 through 1981. From 1981 through 1992, however, smoking rates declined very little, if at all, for whites and Hispanics, but the rates for African Americans continued to decline steadily. As a result, by 1992 the daily smoking rate for African Americans was one-fifth that for whites. In recent years all three ethnic groups of twelfth graders have shown an increase in smoking.

DRUG USE IN EIGHTH GRADE

It may be useful to focus specifically on the youngest age group in the study—the eighth graders, most of whom are 13 or 14 years old—because the exceptional levels of both licit and illicit drug use that they already have attained helps illustrate the urgent need for the nation to continue to address the problems of substance abuse among its young.

- By eighth grade 54% of youngsters report having tried ***alcohol*** (more than just a few sips) and a quarter (25%) say they have already been drunk at least once.

- Nearly half of the eighth graders (47%) have tried ***cigarettes***, and 19%, or nearly one in five, say they have smoked in the prior month. Shocking to most adults is the fact that only 53% of eighth graders recognize that there is great risk associated with being a pack-a-day smoker.

- ***Smokeless tobacco*** has been tried by 27% of male eighth graders, is used currently by 10% of them, and is used daily by 1.7%. (Rates are far lower among female eighth graders.)

- Among eighth graders, one in five (21%) have used ***inhalants***, and one in sixteen (6%) said they have used in the past month. This is the only class of drugs for which use is substantially higher in eighth grade than in tenth or twelfth grade.

- ***Marijuana*** has been tried by nearly one in every four eighth graders (23%), and has been used in the prior month by one in every ten (10%).

- A surprisingly large number of eighth-grade students say they have tried prescription-type ***stimulants*** (12%); 4.0% say they have used them in the prior 30 days.

- Relatively few eighth graders say they have tried most of the other illicit drugs yet. (This is consistent with the retrospective reports from seniors.) But the proportions having at least some experience with them still is not inconsequential when one considers the fact that a 3.3% prevalence rate, for example, on average represents one child in every 30-student classroom: ***tranquilizers*** (4.8%), ***LSD*** (4.7%), ***other hallucinogens*** (2.6%), ***crack*** (2.7%), ***other cocaine*** (3.5%), ***heroin*** (2.1%), and ***steroids*** (1.8% overall, and 2.4% among males.)

- Overall, some 17.7% of all eighth graders in 1997 have tried ***some illicit drug other than marijuana*** (excluding inhalants).

- The very large numbers who have already begun use of the so-called "gateway drugs" (***tobacco***, ***alcohol***, ***inhalants***, and ***marijuana***) suggests that a substantial number of eighth grade students are already at risk of proceeding further to such drugs as LSD, cocaine, amphetamines, and heroin.

SUMMARY AND CONCLUSIONS

We can summarize the findings on trends as follows: over more than a decade—from the late 1970s to the early 1990s—there were very appreciable declines of use of a number of ***illicit drugs*** among twelfth-grade students, and even larger declines in their use among American college students and young adults. These substantial improvements—which seem largely explainable in terms of changes in attitudes, beliefs about risk of drugs, and peer norms against drug use—have some extremely important policy implications. One is that these various substance-using behaviors among American young people are malleable—they can be changed. It has been done before. The second is that demand-side factors appear to have been pivotal in bringing about those changes. The availability of marijuana, as reported by high school seniors, has held fairly steady throughout the life of the study. (Moreover, both abstainers and quitters rank availability and price very low on their list of reasons for not using.) And, in fact, the perceived availability of cocaine actually was rising during the beginning of the sharp decline in cocaine and crack use.

However, improvements are not inevitable and, when they occur, should not be taken for granted because relapse is always possible. Just such a relapse occurred in the 1990s.

In 1992, eighth graders exhibited a significant increase in annual use of ***marijuana, cocaine, LSD***, and ***hallucinogens other than LSD***, as well as an increase in ***inhalant*** use. (In fact, all five populations showed some increase in ***LSD*** use, continuing a longer-term trend for college students and young adults.) Further, the attitudes and beliefs of seniors regarding drug use began to soften.

In 1993, use of a number of drugs began to rise among tenth and twelfth graders fulfilling our earlier predictions that we based on their eroding beliefs about the dangers of drugs and their attitudes about drug use. Increases occurred in a number of the so-called "gateway drugs"—***marijuana***, ***cigarettes***, and ***inhalants***—which we argued boded ill for the use of later drugs in the usual sequence of drug-use involvement. Indeed, the proportion of students reporting the use of ***any illicit drug other than marijuana*** rose steadily after 1991 among eighth and tenth graders and after 1992 among twelfth graders. (This proportion increased by half among eighth graders with annual prevalence rising from 8.4% in 1991 to 11.8% in 1997.) The softening attitudes about ***crack*** and other forms of ***cocaine*** also provided a basis for concern.

Over the years, this study has demonstrated that changes in perceived risk and disapproval have been important causes of change in the use of a number of drugs. These beliefs and attitudes surely are influenced by the amount and nature of the public attention being paid to the drug issue at the time young people are growing up. A substantial decline in attention to this issue in the early 1990s very likely helps to explain why the increases in perceived risk and disapproval among students ceased and began to backslide. News coverage of the drug issue plummeted between 1989 and 1993 (although it has been making a comeback as the problem worsened again) and the placement of the ads from the Partnership for a Drug Free America also fell considerably.

Also, we were seeing the beginning of the turnaround in the drug abuse situation more generally among our youngest cohorts—perhaps because they had not had the same opportunities for vicarious learning from the adverse drug experiences of people around them and people they learn about through the media. Clearly there was a danger that, as the drug epidemic subsided, newer cohorts would have far less opportunity to learn through informal means about the dangers of drugs— what we have called a "generational forgetting" of those risks would occur through a process of generational replacement of older, more drug-experienced cohorts with newer, more naive ones. This may mean that the nation must redouble its efforts to be sure that they learn these lessons through more formal means—from schools, parents, and focused messages in the media, for example—and that this more formalized prevention effort should be institutionalized so that it will endure for the long term. Clearly, for the foreseeable future, American young people will be aware of the psychoactive potential of a host of drugs and will have access to them. That means that each new generation of young people must learn the reasons that they should not use drugs. Otherwise their natural curiosity and desires for new experiences will lead a great many of them to use.

The following facts help to put into perspective the magnitude and variety of substance use problems which remain among American young people at the present time:

- By the end of eighth grade, nearly four in every ten (38%) of American eighth grade students have tried an ***illicit drug*** (if inhalants are included as an illicit drug), by twelfth grade, more than half (56%) have done so.

- By their late twenties, two-thirds (67%) of today's American young adults have tried an ***illicit drug***, including 40% who have tried some ***illicit drug other than*** (usually in addition to) ***marijuana***. (These figures do not include inhalants.)

- One out of four young Americans have tried ***cocaine*** (25% in 1997) by the age of 30, and 9% have tried it by their senior year of high school (approximately age eighteen). Nearly one in every twenty-five (3.9%) have tried the particularly dangerous form of cocaine called ***crack***. In the young adult sample 3.6% have tried crack, including 7.2% by age 29-30.

- Over one in every twenty (5.8%) high school seniors in 1997 smoked ***marijuana daily***. Among young adults aged 19 to 28, the percent is slightly less (3.8%). Among seniors in 1997, nearly one in five (18.8%) had been daily marijuana smokers at some time in their lives for at least a month, and among young adults the comparable figure is 13.6%.

- Some 31% of seniors had consumed ***five or more drinks in a row*** at least once in the two weeks prior to the survey, and such behavior tends to increase among young adults one to four years past high school. The prevalence of such behavior among male college students reaches 51%.

- Over one-third (37%) of seniors in 1997 were current ***cigarette*** smokers and a quarter (25%) already were current daily smokers. In addition, many of the lighter smokers will convert to heavy smoking within a year or so after they leave high school.

- Despite the very substantial improvement in the situation in this country, between 1979 and 1991, it is still true that this nation's secondary school students and young adults show a level of involvement with illicit drugs that is as great as has been documented in any other industrialized nation in the world.[6] Even by longer-term historical standards in this country, these rates remain extremely high. Heavy drinking also remains widespread and troublesome; and certainly the continuing initiation of a large and growing proportion of young people to cigarette smoking is a matter of the greatest public health concern.

- Finally, we note the seemingly unending capacity of pharmacological experts and amateurs to discover new substances with abuse potential that can be used to alter mood and consciousness, as well as the potential for our young people to discover the abuse potential of existing products, like Robitussin™, and to rediscover older drugs, such as ***LSD*** and now ***heroin***. While as a society we have made significant progress on a number of fronts in the fight against drug abuse, we must remain vigilant against the opening of new fronts, as well as the re-emergence of trouble on older ones. The recent rises in illicit drug use and in cigarette smoking, both of which began in the early 1990s, certainly suggests that as a society we have not quite gotten it right.

- The drug problem is not an enemy which can be vanquished, as in a war. It is more a recurring and relapsing problem which must be contained to the extent possible on a long-term, ongoing basis; and, therefore, it is a problem which requires an ongoing, dynamic response from our society—one which takes into account the continuing generational replacement of our children and the generational forgetting of the dangers of drugs which can occur with that replacement.

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[6] A recently published report from an international collaborative study, modeled largely after the Monitoring the Future, suggests that in 1995 the United Kingdom had illicit drug use rates among fifteen year old students about comparable to those observed in the United States. All the other countries had substantially lower rates. See B. Hibell et al (Eds.) The 1995 ESPAD Report. *(European School Survey Project on Alcohol and Other Drugs) Use among Students in 26 European Countries*, Stockholm: The Swedish Council for Information on Alcohol and Other Drugs and the Council of Europe, 1997.

TABLE 2-1a

Trends in Lifetime Prevalence of Use of Various Drugs for Eighth, Tenth, and Twelfth Graders, College Students, and Young Adults

(Entries are percentages)

	Lifetime								
	1991	1992	1993	1994	1995	1996	1997	'96–'97 change	'91–'97 change
Any Illicit Drug[a]									
8th Grade	18.7	20.6	22.5	25.7	28.5	31.2	29.4	-1.8	+10.7sss
10th Grade	30.6	29.8	32.8	37.4	40.9	45.4	47.3	+1.9	+16.7sss
12th Grade	44.1	40.7	42.9	45.6	48.4	50.8	54.3	+3.5s	+10.2sss
College Students	50.4	48.8	45.9	45.5	45.5	47.4	49.0	+1.6	-1.4
Young Adults	62.2	60.2	59.6	57.5	57.4	56.4	56.7	+0.4	-5.5sss
Any Illicit Drug Other Than Marijuana[a]									
8th Grade	14.3	15.6	16.8	17.5	18.8	19.2	17.7	-1.5	+3.4sss
10th Grade	19.1	19.2	20.9	21.7	24.3	25.5	25.0	-0.5	+5.9sss
12th Grade	26.9	25.1	26.7	27.6	28.1	28.5	30.0	+1.5	+3.1s
College Students	25.8	26.1	24.3	22.0	24.5	22.7	24.4	+1.7	-1.4
Young Adults	37.8	37.0	34.6	33.4	32.8	31.0	30.5	-0.5	-7.3sss
Any Illicit Drug Including Inhalants[a,b]									
8th Grade	28.5	29.6	32.3	35.1	38.1	39.4	38.1	-1.3	+9.6sss
10th Grade	36.1	36.2	38.7	42.7	45.9	49.8	50.9	+1.1	+14.8sss
12th Grade	47.6	44.4	46.6	49.1	51.5	53.5	56.3	+2.8	+8.7sss
College Students	52.0	50.3	49.1	47.0	47.0	49.1	50.7	+1.7	-1.3
Young Adults	63.4	61.2	61.2	58.5	59.0	58.2	58.4	+0.2	-5.0sss
Marijuana/ Hashish									
8th Grade	10.2	11.2	12.6	16.7	19.9	23.1	22.6	-0.5	+12.4sss
10th Grade	23.4	21.4	24.4	30.4	34.1	39.8	42.3	+2.5s	+18.9sss
12th Grade	36.7	32.6	35.3	38.2	41.7	44.9	49.6	+4.7ss	+12.9sss
College Students	46.3	44.1	42.0	42.2	41.7	45.1	46.1	+0.9	-0.2
Young Adults	58.6	56.4	55.9	53.7	53.6	53.4	53.8	+0.3	-4.8sss
Inhalants[b,c]									
8th Grade	17.6	17.4	19.4	19.9	21.6	21.2	21.0	-0.2	+3.4sss
10th Grade	15.7	16.6	17.5	18.0	19.0	19.3	18.3	-1.0	+2.6ss
12th Grade	17.6	16.6	17.4	17.7	17.4	16.6	16.1	-0.5	-1.5
College Students	14.4	14.2	14.8	12.0	13.8	11.4	12.4	+1.0	-2.0
Young Adults	13.4	13.5	14.1	13.2	14.5	14.1	14.1	0.0	+0.7
Nitrites[d]									
8th Grade	—	—	—	—	—	—	—	—	—
10th Grade	—	—	—	—	—	—	—	—	—
12th Grade	1.6	1.5	1.4	1.7	1.5	1.8	2.0	+0.2	+0.4
College Students	—	—	—	—	—	—	—	—	—
Young Adults	1.4	1.2	1.3	1.0	—	—	—	—	—

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TABLE 2-1a (cont.)

Trends in Lifetime Prevalence of Use of Various Drugs for Eighth, Tenth, and Twelfth Graders, College Students, and Young Adults

	Lifetime								
	1991	1992	1993	1994	1995	1996	1997	'96–'97 change	'91–'97 change
Hallucinogens[c]									
8th Grade	3.2	3.8	3.9	4.3	5.2	5.9	5.4	-0.5	+2.2sss
10th Grade	6.1	6.4	6.8	8.1	9.3	10.5	10.5	0.0	+4.4sss
12th Grade	9.6	9.2	10.9	11.4	12.7	14.0	15.1	+1.1	+5.5sss
College Students	11.3	12.0	11.8	10.0	13.0	12.6	13.8	+1.3	+2.5s
Young Adults	15.7	15.7	15.4	15.4	16.1	16.4	16.8	+0.3	+1.1
LSD									
8th Grade	2.7	3.2	3.5	3.7	4.4	5.1	4.7	-0.4	+2.0sss
10th Grade	5.6	5.8	6.2	7.2	8.4	9.4	9.5	+0.1	+3.9sss
12th Grade	8.8	8.6	10.3	10.5	11.7	12.6	13.6	+1.0	+4.8sss
College Students	9.6	10.6	10.6	9.2	11.5	10.8	11.7	+0.9	+2.1
Young Adults	13.5	13.8	13.6	13.8	14.5	15.0	15.0	0.0	+1.5s
Hallucinogens Other Than LSD									
8th Grade	1.4	1.7	1.7	2.2	2.5	3.0	2.6	-0.4	+1.2sss
10th Grade	2.2	2.5	2.8	3.8	3.9	4.7	4.8	+0.1	+2.6sss
12th Grade	3.7	3.3	3.9	4.9	5.4	6.8	7.5	+0.7	+3.8sss
College Students	6.0	5.7	5.4	4.4	6.5	6.5	7.5	+1.0	+1.5
Young Adults	8.4	8.0	7.6	7.4	7.8	7.9	8.5	+0.6	+0.1
PCP[4]									
8th Grade	—	—	—	—	—	—	—	—	—
10th Grade	—	—	—	—	—	—	—	—	—
12th Grade	2.9	2.4	2.9	2.8	2.7	4.0	3.9	-0.1	+1.0
College Students	—	—	—	—	—	—	—	—	—
Young Adults	3.1	2.0	1.9	2.0	2.2	1.9	2.4	+0.5	-0.7
MDMA (Ecstasy)[d]									
8th Grade	—	—	—	—	—	3.4	3.2	-0.2	—
10th Grade	—	—	—	—	—	5.6	5.7	+0.1	—
12th Grade	—	—	—	—	—	6.1	6.9	+0.8	—
College Students	2.0	2.9	2.3	2.1	3.1	4.3	4.7	+0.3	+2.6s
Young Adults	3.2	3.9	3.8	3.8	4.5	5.2	5.1	0.0	+1.9ss
Cocaine									
8th Grade	2.3	2.9	2.9	3.6	4.2	4.5	4.4	-0.1	+2.1sss
10th Grade	4.1	3.3	3.6	4.3	5.0	6.5	7.1	+0.6	+3.0sss
12th Grade	7.8	6.1	6.1	5.9	6.0	7.1	8.7	+1.6s	+0.9
College Students	9.4	7.9	6.3	5.0	5.5	5.0	5.6	+0.6	-3.8sss
Young Adults	21.0	19.5	16.9	15.2	13.7	12.9	12.1	-0.8	-8.9sss

(Table continued on next page)

TABLE 2-1a (cont.)

Trends in Lifetime Prevalence of Use of Various Drugs for Eighth, Tenth, and Twelfth Graders, College Students, and Young Adults

	Lifetime								
	1991	1992	1993	1994	1995	1996	1997	'96–'97 change	'91–'97 change
Crack									
8th Grade	1.3	1.6	1.7	2.4	2.7	2.9	2.7	-0.2	+1.4sss
10th Grade	1.7	1.5	1.8	2.1	2.8	3.3	3.6	+0.3	+1.9sss
12th Grade	3.1	2.6	2.6	3.0	3.0	3.3	3.9	+0.6s	+0.8ss
College Students	1.5	1.7	1.3	1.0	1.8	1.2	1.4	+0.2	-0.1
Young Adults	4.8	5.1	4.3	4.4	3.8	3.9	3.6	-0.3	-1.2sss
Other Cocaine[e]									
8th Grade	2.0	2.4	2.4	3.0	3.4	3.8	3.5	-0.3	+1.5sss
10th Grade	3.8	3.0	3.3	3.8	4.4	5.5	6.1	+0.6	+2.3sss
12th Grade	7.0	5.3	5.4	5.2	5.1	6.4	8.2	+1.8s	+1.2
College Students	9.0	7.6	6.3	4.6	5.2	4.6	5.0	+0.4	-4.0sss
Young Adults	19.8	18.4	15.1	13.9	12.4	11.9	11.3	-0.6	-8.5sss
Heroin[f]									
8th Grade	1.2	1.4	1.4	2.0	2.3	2.4	2.1	-0.3	+0.9sss
10th Grade	1.2	1.2	1.3	1.5	1.7	2.1	2.1	0.0	+0.9sss
12th Grade	0.9	1.2	1.1	1.2	1.6	1.8	2.1	+0.3	+1.2sss
College Students	0.5	0.5	0.6	0.1	0.6	0.7	0.9	+0.2	+0.4
Young Adults	0.9	0.9	0.9	0.8	1.1	1.3	1.3	0.0	+0.4s
Other Opiates[g]									
8th Grade	—	—	—	—	—	—	—	—	—
10th Grade	—	—	—	—	—	—	—	—	—
12th Grade	6.6	6.1	6.4	6.6	7.2	8.2	9.7	+1.5ss	+3.1sss
College Students	7.3	7.3	6.2	5.1	7.2	5.7	8.2	+2.5ss	+0.9
Young Adults	9.3	8.9	8.1	8.2	9.0	8.3	9.2	+0.9	-0.1
Stimulants[g]									
8th Grade	10.5	10.8	11.8	12.3	13.1	13.5	12.3	-1.2	+1.8s
10th Grade	13.2	13.1	14.9	15.1	17.4	17.7	17.0	-0.7	+3.8sss
12th Grade	15.4	13.9	15.1	15.7	15.3	15.3	16.5	+1.2	+1.1
College Students	13.0	10.5	10.1	9.2	10.7	9.5	10.6	+1.1	-2.4s
Young Adults	22.4	20.2	18.7	17.1	16.6	15.3	14.6	-0.7	-7.8sss
Ice[h]									
8th Grade	—	—	—	—	—	—	—	—	—
10th Grade	—	—	—	—	—	—	—	—	—
12th Grade	3.3	2.9	3.1	3.4	3.9	4.4	4.4	0.0	+1.1s
College Students	1.3	0.6	1.6	1.3	1.0	0.8	1.6	+0.7	+0.3
Young Adults	2.9	2.2	2.7	2.5	2.1	3.1	2.5	-0.7	-0.4
Barbiturates[g]									
8th Grade	—	—	—	—	—	—	—	—	—
10th Grade	—	—	—	—	—	—	—	—	—
12th Grade	6.2	5.5	6.3	7.0	7.4	7.6	8.1	+0.5	+1.9sss
College Students	3.5	3.8	3.5	3.2	4.0	4.6	5.2	+0.6	+1.7s
Young Adults	8.2	7.4	6.5	6.4	6.7	6.6	6.5	-0.1	-1.7sss

(Table continued on next page)

TABLE 2-1a (cont.)

Trends in Lifetime Prevalence of Use of Various Drugs for Eighth, Tenth, and Twelfth Graders, College Students, and Young Adults

	Lifetime								
	1991	1992	1993	1994	1995	1996	1997	'96–'97 change	'91–'97 change
Tranquilizers[g]									
8th Grade	3.8	4.1	4.4	4.6	4.5	5.3	4.8	-0.5	+1.0ss
10th Grade	5.8	5.9	5.7	5.4	6.0	7.1	7.3	+0.2	+1.5ss
12th Grade	7.2	6.0	6.4	6.6	7.1	7.2	7.8	+0.6	+0.6
College Students	6.8	6.9	6.3	4.4	5.4	5.3	6.9	+1.6	+0.1
Young Adults	11.8	11.3	10.5	9.9	9.7	9.3	8.6	-0.7	-3.2sss
Alcohol[i]									
Any use									
8th Grade	70.1	69.3	67.1	—	—	—	—	—	—
			55.7	55.8	54.5	55.3	53.8	-1.5	-1.9[j]
10th Grade	83.8	82.3	80.8	—	—	—	—	—	—
			71.6	71.1	70.5	71.8	72.0	+0.2	+0.4[j]
12th Grade	88.0	87.5	87.0	—	—	—	—	—	—
			80.0	80.4	80.7	79.2	81.7	+2.5ss	+1.7[j]
College Students	93.6	91.8	89.3	88.2	88.5	88.4	87.3	-1.1	-6.4sss
Young Adults	94.1	93.4	92.1	91.2	91.6	91.2	90.7	-0.5	-3.4sss
Been Drunk[h]									
8th Grade	26.7	26.8	26.4	25.9	25.3	26.8	25.2	-1.6	-1.5
10th Grade	50.0	47.7	47.9	47.2	46.9	48.5	49.4	+0.9	-0.6
12th Grade	65.4	63.4	62.5	62.9	63.2	61.8	64.2	+2.4	-1.2
College Students	—	—	—	—	—	—	—	—	—
Young Adults	—	—	—	—	—	—	—	—	—
Cigarettes									
Any use									
8th Grade	44.0	45.2	45.3	46.1	46.4	49.2	47.3	-1.9	+3.3ss
10th Grade	55.1	53.5	56.3	56.9	57.6	61.2	60.2	-1.0	+5.1sss
12th Grade	63.1	61.8	61.9	62.0	64.2	63.5	65.4	+1.9	+2.3
College Students	—	—	—	—	—	—	—	—	—
Young Adults	—	—	—	—	—	—	—	—	—
Smokeless Tobacco[d]									
8th Grade	22.2	20.7	18.7	19.9	20.0	20.4	16.8	-3.6ss	-5.4sss
10th Grade	28.2	26.6	28.1	29.2	27.6	27.4	26.3	-1.1	-1.9
12th Grade	—	32.4	31.0	30.7	30.9	29.8	25.3	-4.5	-7.1s[k]
College Students	—	—	—	—	—	—	—	—	—
Young Adults	—	—	—	—	—	—	—	—	—
Steroids[h]									
8th Grade	1.9	1.7	1.6	2.0	2.0	1.8	1.8	0.0	-0.1
10th Grade	1.8	1.7	1.7	1.8	2.0	1.8	2.0	+0.2	+0.2
12th Grade	2.1	2.1	2.0	2.4	2.3	1.9	2.4	+0.5	+0.3
College Students	—	—	—	—	—	—	—	—	—
Young Adults	1.7	1.9	1.5	1.3	1.5	1.5	1.4	0.0	-0.3

(Table continued on next page)

TABLE 2-1b

Trends in Annual and 30-Day Prevalence of Use of Various Drugs for Eighth, Tenth, and Twelfth Graders, College Students, and Young Adults

	Annual									30-Day								
	1991	1992	1993	1994	1995	1996	1997	'96–'97 change	'91–'97 change	1991	1992	1993	1994	1995	1996	1997	'96–'97 change	'91–'97 change
Any Illicit Drug[a]																		
8th Grade	11.3	12.9	15.1	18.5	21.4	23.6	22.1	-1.5	+10.8sss	5.7	6.8	8.4	10.9	12.4	14.6	12.9	-1.7ss	+7.2sss
10th Grade	21.4	20.4	24.7	30.0	33.3	37.5	38.5	+1.0	+17.1sss	11.6	11.0	14.0	18.5	20.2	23.2	23.0	-0.2	+11.4sss
12th Grade	29.4	27.1	31.0	35.8	39.0	40.2	42.4	+2.2	+13.0sss	16.4	14.4	18.3	21.9	23.8	24.6	26.2	+1.6	+9.8sss
College Students	29.2	30.6	30.6	31.4	33.5	34.2	34.1	-0.1	+4.9ss	15.2	16.1	15.1	16.0	19.1	17.6	19.2	+1.6	+4.0ss
Young Adults	27.0	28.3	28.4	28.4	29.8	29.2	29.2	0.0	+2.2ss	15.1	14.8	14.9	15.3	15.8	15.8	16.4	+0.6	+1.3s
Any Illicit Drug Other Than Marijuana[a]																		
8th Grade	8.4	9.3	10.4	11.3	12.6	13.1	11.8	-1.3s	+3.4sss	3.8	4.7	5.3	5.6	6.5	6.9	6.0	-0.9s	+2.2sss
10th Grade	12.2	12.3	13.9	15.2	17.5	18.4	18.2	-0.2	+6.0sss	5.5	5.7	6.5	7.1	8.9	8.9	8.8	-0.1	+3.3sss
12th Grade	16.2	14.9	17.1	18.0	19.4	19.8	20.7	+0.9	+4.5sss	7.1	6.3	7.9	8.8	10.0	9.5	10.7	+1.2	+3.6sss
College Students	13.2	13.1	12.5	12.2	15.9	12.8	15.8	+3.0s	+2.6s	4.3	4.6	5.4	4.6	6.3	4.5	6.8	+2.4ss	+2.5ss
Young Adults	14.3	14.1	13.0	13.0	13.8	13.2	13.6	+0.5	-0.7	5.4	5.5	4.9	5.3	5.7	4.7	5.5	+0.8s	+0.1
Any Illicit Drug Including Inhalants[a,b]																		
8th Grade	16.7	18.2	21.1	24.2	27.1	28.7	27.2	-1.5	+10.5sss	8.8	10.0	12.0	14.3	16.1	17.5	16.0	-1.5s	+7.2sss
10th Grade	23.9	23.5	27.4	32.5	35.6	39.6	40.3	+0.7	+16.4sss	13.1	12.6	15.5	20.0	21.6	24.5	24.1	-0.4	+11.0sss
12th Grade	31.2	28.8	32.5	37.6	40.2	41.9	43.3	+1.4	+12.1sss	17.8	15.5	19.3	23.0	24.8	25.5	26.9	+1.4	+9.1sss
College Students	29.8	31.1	31.7	31.9	33.7	35.1	35.5	+0.4	+5.7ss	15.1	16.5	15.7	16.4	19.6	18.0	19.6	+1.5	+4.5ss
Young Adults	27.8	29.2	28.9	29.2	30.4	30.2	30.1	-0.1	+2.3ss	15.4	15.3	15.1	16.1	16.1	16.4	16.9	+0.4	+1.5s
Marijuana/ Hashish																		
8th Grade	6.2	7.2	9.2	13.0	15.8	18.3	17.7	-0.6	+11.5sss	3.2	3.7	5.1	7.8	9.1	11.3	10.2	-1.1	+7.0sss
10th Grade	16.5	15.2	19.2	25.2	28.7	33.6	34.8	+1.2	+18.3sss	8.7	8.1	10.9	15.8	17.2	20.4	20.5	+0.1	+11.8sss
12th Grade	23.9	21.9	26.0	30.7	34.7	35.8	38.5	+2.7	+14.6sss	13.8	11.9	15.5	19.0	21.2	21.9	23.7	+1.8	+9.9sss
College Students	26.5	27.7	27.9	29.3	31.2	33.1	31.6	-1.5	+5.1ss	14.1	14.6	14.2	15.1	18.6	17.5	17.7	+0.1	+3.6ss
Young Adults	23.8	25.2	25.1	25.5	26.5	27.0	26.8	-0.2	+3.0sss	13.5	13.3	13.4	14.1	14.0	15.1	15.0	-0.1	+1.5s
Inhalants[b,c]																		
8th Grade	9.0	9.5	11.0	11.7	12.8	12.2	11.8	-0.4	+2.8sss	4.4	4.7	5.4	5.6	6.1	5.8	5.6	-0.2	+1.2sss
10th Grade	7.1	7.5	8.4	9.1	9.6	9.5	8.7	-0.8	+1.6ss	2.7	2.7	3.3	3.6	3.5	3.3	3.0	-0.3	+0.3
12th Grade	6.6	6.2	7.0	7.7	8.0	7.6	6.7	-0.9	+0.1	2.4	2.3	2.5	2.7	3.2	2.5	2.5	0.0	+0.1
College Students	3.5	3.1	3.8	3.0	3.9	3.6	4.1	+0.5	+0.6	0.9	1.1	1.3	0.6	1.6	0.8	0.8	-0.1	-0.2
Young Adults	2.0	1.9	2.1	2.1	2.4	2.2	2.3	+0.1	+0.3	0.5	0.6	0.7	0.5	0.7	0.5	0.5	0.0	0.0
Nitrites[d]																		
8th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
10th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
12th Grade	0.9	0.5	0.9	1.1	1.1	1.6	1.2	-0.4	+0.3	0.4	0.3	0.6	0.4	0.4	0.7	0.7	0.0	+0.3
College Students	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Young Adults	0.2	0.1	0.4	0.3	—	—	—	—	—	*	0.1	0.2	0.1	—	—	—	—	—

(Table continued on next page)

TABLE 2-1b (cont.)

Trends in Annual and 30-Day Prevalence of Use of Various Drugs for Eighth, Tenth, and Twelfth Graders, College Students, and Young Adults

	Annual									30-Day								
	1991	1992	1993	1994	1995	1996	1997	'96–'97 change	'91–'97 change	1991	1992	1993	1994	1995	1996	1997	'96–'97 change	'91–'97 change
Hallucinogens[c]																		
8th Grade	1.9	2.5	2.6	2.7	3.6	4.1	3.7	-0.4	+1.8sss	0.8	1.1	1.2	1.3	1.7	1.9	1.8	-0.1	+1.0sss
10th Grade	4.0	4.3	4.7	5.8	7.2	7.8	7.6	-0.2	+3.6sss	1.6	1.8	1.9	2.4	3.3	2.8	3.3	+0.5	+1.7sss
12th Grade	5.8	5.9	7.4	7.6	9.3	10.1	9.8	-0.3	+4.0sss	2.2	2.1	2.7	3.1	4.4	3.5	3.9	+0.4	+1.7sss
College Students	6.3	6.8	6.0	6.2	8.2	6.9	7.7	+0.8	+1.4	1.2	2.3	2.5	2.1	3.3	1.9	2.1	+0.2	+0.9s
Young Adults	4.5	5.0	4.5	4.8	5.6	5.6	5.9	+0.2	+1.4sss	1.1	1.5	1.2	1.4	1.7	1.2	1.5	+0.3	+0.4
LSD																		
8th Grade	1.7	2.1	2.3	2.4	3.2	3.5	3.2	-0.3	+1.5sss	0.6	0.9	1.0	1.1	1.4	1.5	1.5	0.0	+0.9sss
10th Grade	3.7	4.0	4.2	5.2	6.5	6.9	6.7	-0.2	+3.0sss	1.5	1.6	1.6	2.0	3.0	2.4	2.8	+0.4	+1.3sss
12th Grade	5.2	5.6	6.8	6.9	8.4	8.8	8.4	-0.4	+3.2sss	1.9	2.0	2.4	2.6	4.0	2.5	3.1	+0.6s	+1.2sss
College Students	5.1	5.7	5.1	5.2	6.9	5.2	5.0	-0.1	-0.1	0.8	1.8	1.6	1.8	2.5	0.9	1.1	+0.2	+0.3
Young Adults	3.8	4.3	3.8	4.0	4.6	4.5	4.4	-0.1	+0.6	0.8	1.1	0.8	1.1	1.3	0.7	0.9	+0.2	+0.1
Hallucinogens Other Than LSD																		
8th Grade	0.7	1.1	1.0	1.3	1.7	2.0	1.8	-0.2	+1.1sss	0.3	0.4	0.5	0.7	0.8	0.9	0.7	-0.2	+0.4sss
10th Grade	1.3	1.4	1.9	2.4	2.8	3.3	3.3	0.0	+2.0sss	0.4	0.5	0.7	1.0	1.0	1.0	1.2	+0.2	+0.8sss
12th Grade	2.0	1.7	2.2	3.1	3.8	4.4	4.6	+0.2	+2.6sss	0.7	0.5	0.8	1.2	1.3	1.6	1.7	+0.1	+1.0sss
College Students	3.1	2.6	2.7	2.8	4.0	4.1	4.9	+0.7	+1.8s	0.6	0.7	1.1	0.8	1.6	1.2	1.2	0.0	+0.6
Young Adults	1.7	1.9	1.9	2.0	2.5	2.8	3.1	+0.4	+1.4sss	0.3	0.5	0.6	0.6	0.6	0.6	0.7	0.0	+0.4ss
PCP[d]																		
8th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
10th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
12th Grade	1.4	1.4	1.4	1.6	1.8	2.6	2.3	-0.3	+0.9	0.5	0.6	1.0	0.7	0.6	1.3	0.7	-0.6	+0.2
College Students	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Young Adults	0.3	0.3	0.2	0.3	0.3	0.2	0.5	+0.4	+0.2	0.1	0.2	0.2	0.1	0.0	0.1	0.1	0.0	0.0
MDMA (Ecstasy)[d]																		
8th Grade	—	—	—	—	—	2.3	2.3	0.0	—	—	—	—	—	—	1.0	1.0	0.0	—
10th Grade	—	—	—	—	—	4.6	3.9	-0.7	—	—	—	—	—	—	1.8	1.3	-0.5	—
12th Grade	—	—	—	—	—	4.6	4.0	-0.6	—	—	—	—	—	—	2.0	1.6	-0.4	—
College Students	0.9	2.0	0.8	0.5	2.4	2.8	2.4	-0.4	+1.5	0.2	0.4	0.3	0.2	0.7	0.7	0.8	+0.1	+0.6
Young Adults	0.8	1.0	0.8	0.7	1.6	1.7	2.1	+0.4	+1.3sss	0.1	0.3	0.3	0.2	0.4	0.3	0.6	+0.3	+0.5ss
Cocaine																		
8th Grade	1.1	1.5	1.7	2.1	2.6	3.0	2.8	-0.2	+1.7sss	0.5	0.7	0.7	1.0	1.2	1.3	1.1	-0.2	+0.6sss
10th Grade	2.2	1.9	2.1	2.8	3.5	4.2	4.7	+0.5	+2.5sss	0.7	0.7	0.9	1.2	1.7	1.7	2.0	+0.3	+1.3sss
12th Grade	3.5	3.1	3.3	3.6	4.0	4.9	5.5	+0.6	+2.0sss	1.4	1.3	1.3	1.5	1.8	2.0	2.3	+0.3	+0.9ss
College Students	3.6	3.0	2.7	2.0	3.6	2.9	3.4	+0.5	-0.2	1.0	1.0	0.7	0.6	0.7	0.8	1.6	+0.8s	+0.6
Young Adults	6.2	5.7	4.7	4.3	4.4	4.1	4.7	+0.5	-1.5sss	2.0	1.8	1.4	1.3	1.5	1.2	1.6	+0.3	-0.5

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TABLE 2-1b (cont.)

Trends in Annual and 30-Day Prevalence of Use of Various Drugs for Eighth, Tenth, and Twelfth Graders, College Students, and Young Adults

	Annual									30-Day								
	1991	1992	1993	1994	1995	1996	1997	'96–'97 change	'91–'97 change	1991	1992	1993	1994	1995	1996	1997	'96–'97 change	'91–'97 change
Crack																		
8th Grade	0.7	0.9	1.0	1.3	1.6	1.8	1.7	-0.1	+1.0sss	0.3	0.5	0.4	0.7	0.7	0.8	0.7	-0.1	+0.4sss
10th Grade	0.9	0.9	1.1	1.4	1.8	2.1	2.2	+0.1	+1.3sss	0.3	0.4	0.5	0.6	0.9	0.8	0.9	+0.1	+0.6sss
12th Grade	1.5	1.5	1.5	1.9	2.1	2.1	2.4	+0.3	+0.9sss	0.7	0.6	0.7	0.8	1.0	1.0	0.9	-0.1	+0.2
College Students	0.5	0.4	0.6	0.5	1.1	0.6	0.4	-0.2	-0.1	0.3	0.1	0.1	0.1	0.1	0.1	0.2	+0.1	-0.1
Young Adults	1.2	1.4	1.3	1.1	1.1	1.1	1.0	-0.1	-0.2	0.4	0.4	0.4	0.3	0.2	0.3	0.3	0.0	-0.1
Other Cocaine[e]																		
8th Grade	1.0	1.2	1.3	1.7	2.1	2.5	2.2	-0.3	+1.2sss	0.5	0.5	0.6	0.9	1.0	1.0	0.8	-0.2	+0.3s
10th Grade	2.1	1.7	1.8	2.4	3.0	3.5	4.1	+0.6	+2.0sss	0.6	0.6	0.7	1.0	1.4	1.3	1.6	+0.3	+1.0sss
12th Grade	3.2	2.6	2.9	3.0	3.4	4.2	5.0	+0.8	+1.8ss	1.2	1.0	1.2	1.3	1.3	1.6	2.0	+0.4	+0.8s
College Students	3.2	2.4	2.5	1.8	3.3	2.3	3.0	+0.7	-0.2	1.0	0.9	0.6	0.3	0.8	0.6	1.3	+0.6	+0.3
Young Adults	5.4	5.1	3.9	3.6	3.9	3.8	4.3	+0.5	-1.1s	1.8	1.7	1.1	1.0	1.3	1.1	1.5	+0.3	-0.3
Heroin[f]																		
8th Grade	0.7	0.7	0.7	1.2	1.4	1.6	1.3	-0.3s	+0.6sss	0.3	0.4	0.4	0.6	0.6	0.7	0.6	-0.1	+0.3sss
10th Grade	0.5	0.6	0.7	0.9	1.1	1.2	1.4	+0.2	+0.9sss	0.2	0.2	0.3	0.4	0.6	0.5	0.6	+0.1	+0.4sss
12th Grade	0.4	0.6	0.5	0.6	1.1	1.0	1.2	+0.2	+0.8sss	0.2	0.3	0.2	0.3	0.6	0.5	0.5	0.0	+0.3sss
College Students	0.1	0.1	0.1	0.1	0.3	0.4	0.3	0.0	+0.2	0.1	0.0	*	0.0	0.1	*	0.2	+0.1	+0.1
Young Adults	0.1	0.2	0.2	0.1	0.4	0.4	0.3	-0.1	+0.2ss	*	0.1	0.1	0.1	0.1	0.1	0.1	0.0	+0.1s
Other Opiates[g]																		
8th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
10th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
12th Grade	3.5	3.3	3.6	3.8	4.7	5.4	6.2	+0.8s	+2.7sss	1.1	1.2	1.3	1.5	1.8	2.0	2.3	+0.3	+1.2sss
College Students	2.7	2.7	2.5	2.4	3.8	3.1	4.2	+1.1	+1.5s	0.6	1.0	0.7	0.4	1.2	0.7	1.3	+0.6	+0.7
Young Adults	2.5	2.5	2.2	2.5	3.0	2.9	3.3	+0.4	+0.8ss	0.6	0.7	0.7	0.6	0.9	0.7	0.9	+0.2	+0.3s
Stimulants[g]																		
8th Grade	6.2	6.5	7.2	7.9	8.7	9.1	8.1	-1.0s	+1.9sss	2.6	3.3	3.6	3.6	4.2	4.6	3.8	-0.8ss	+1.2sss
10th Grade	8.2	8.2	9.6	10.2	11.9	12.4	12.1	-0.3	+3.9sss	3.3	3.6	4.3	4.5	5.3	5.5	5.1	-0.4	+1.8sss
12th Grade	8.2	7.1	8.4	9.4	9.3	9.5	10.2	+0.7	+2.0ss	3.2	2.8	3.7	4.0	4.0	4.1	4.8	+0.7s	+1.6sss
College Students	3.9	3.6	4.2	4.2	5.4	4.2	5.7	+1.5	+1.8s	1.0	1.1	1.5	1.5	2.2	0.9	2.1	+1.2ss	+1.1s
Young Adults	4.3	4.1	4.0	4.5	4.6	4.2	4.6	+0.4	+0.3	1.5	1.5	1.5	1.7	1.7	1.5	1.7	+0.2	+0.2
Ice[h]																		
8th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
10th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
12th Grade	1.4	1.3	1.7	1.8	2.4	2.8	2.3	-0.5	+0.9ss	0.6	0.5	0.6	0.7	1.1	1.1	0.8	-0.3	+0.2
College Students	0.1	0.2	0.7	0.8	1.1	0.3	0.8	+0.4	+0.7	0.0	0.0	0.3	0.5	0.3	0.1	0.2	+0.1	+0.2
Young Adults	0.3	0.4	0.8	0.9	1.2	0.9	0.9	0.0	+0.6ss	*	0.1	0.3	0.5	0.3	0.3	0.3	+0.1	+0.3s
Barbiturates[g]																		
8th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
10th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
12th Grade	3.4	2.8	3.4	4.1	4.7	4.9	5.1	+0.2	+1.7sss	1.4	1.1	1.3	1.7	2.2	2.1	2.1	0.0	+0.7sss
College Students	1.2	1.4	1.5	1.2	2.0	2.3	3.0	+0.7	+1.8sss	0.3	0.7	0.4	0.4	0.5	0.8	1.2	+0.4	+0.9ss
Young Adults	1.8	1.6	1.9	1.8	2.1	2.2	2.4	+0.2	+0.6s	0.5	0.5	0.6	0.6	0.8	0.8	0.9	+0.1	+0.4ss

(Table continued on next page)

TABLE 2-1b (cont.)

Trends in Annual and 30-Day Prevalence of Use of Various Drugs for Eighth, Tenth, and Twelfth Graders, College Students, and Young Adults

	Annual									30-Day								
	1991	1992	1993	1994	1995	1996	1997	'96–'97 change	'91–'97 change	1991	1992	1993	1994	1995	1996	1997	'96–'97 change	'91–'97 change
Tranquilizers[g]																		
8th Grade	1.8	2.0	2.1	2.4	2.7	3.3	2.9	-0.4	+1.1sss	0.8	0.8	0.9	1.1	1.2	1.5	1.2	-0.3s	+0.4ss
10th Grade	3.2	3.5	3.3	3.3	4.0	4.6	4.9	+0.3	+1.7sss	1.2	1.5	1.1	1.5	1.7	1.7	2.2	+0.5ss	+1.0sss
12th Grade	3.6	2.8	3.5	3.7	4.4	4.6	4.7	+0.1	+1.1ss	1.4	1.0	1.2	1.4	1.8	2.0	1.8	-0.2	+0.4s
College Students	2.4	2.9	2.4	1.8	2.9	2.8	3.8	+1.1	+1.4s	0.6	0.6	0.4	0.4	0.5	0.7	1.2	+0.5	+0.6
Young Adults	3.5	3.4	3.1	2.9	3.4	3.2	3.1	0.0	-0.4	0.9	1.0	1.0	0.8	1.1	0.7	1.1	+0.3s	+0.2
Alcohol[i]																		
Any use																		
8th Grade	54.0	53.7	51.6	—	—	—	—	—	—	25.1	26.1	26.2	—	—	—	—	—	—
			45.4	46.8	45.3	46.5	45.5	-1.0	+0.1[j]			24.3	25.5	24.6	26.2	24.5	-1.7	+0.2[j]
10th Grade	72.3	70.2	69.3	—	—	—	—	—	—	42.8	39.9	41.5	—	—	—	—	—	—
			63.4	63.9	63.5	65.0	65.2	+0.2	+1.8[j]			38.2	39.2	38.8	40.4	40.1	-0.3	+1.9[j]
12th Grade	77.7	76.8	76.0	—	—	—	—	—	—	54.0	51.3	51.0	—	—	—	—	—	—
			72.7	73.0	73.7	72.5	74.8	+2.3s	+2.1[j]			48.6	50.1	51.3	50.8	52.7	+1.9	+4.1ss[j]
College Students	88.3	86.9	85.1	82.7	83.2	82.9	82.4	-0.5	-5.9sss	74.7	71.4	70.1	67.8	67.5	67.0	65.8	-1.1	-8.9sss
Young Adults	86.9	86.2	85.3	83.7	84.7	84.0	84.3	+0.2	-2.6sss	70.6	69.0	68.3	67.7	68.1	66.7	67.5	+0.8	-3.1sss
Been Drunk[h]																		
8th Grade	17.5	18.3	18.2	18.2	18.4	19.8	18.4	-1.4	+0.9	7.6	7.5	7.8	8.7	8.3	9.6	8.2	-1.4s	+0.6
10th Grade	40.1	37.0	37.8	38.0	38.5	40.1	40.7	+0.6	+0.6	20.5	18.1	19.8	20.3	20.8	21.3	22.4	+1.1	+1.9
12th Grade	52.7	50.3	49.6	51.7	52.5	51.9	53.2	+1.3	+0.5	31.6	29.9	28.9	30.8	33.2	31.3	34.2	+2.9	+2.6
College Students	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Young Adults	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Cigarettes																		
Any use																		
8th Grade	—	—	—	—	—	—	—	—	—	14.3	15.5	16.7	18.6	19.1	21.0	19.4	-1.6	+5.1sss
10th Grade	—	—	—	—	—	—	—	—	—	20.8	21.5	24.7	25.4	27.9	30.4	29.8	-0.6	+9.0sss
12th Grade	—	—	—	—	—	—	—	—	—	28.3	27.8	29.9	31.2	33.5	34.0	36.5	+2.5s	+8.2sss
College Students	35.6	37.3	38.8	37.6	39.3	41.4	43.6	+2.2	+8.0sss	23.2	23.5	24.5	23.5	26.8	27.9	28.3	+0.4	+5.1ss
Young Adults	37.7	37.9	37.8	38.3	38.8	40.3	41.8	+1.5	+4.1sss	28.2	28.3	28.0	28.0	29.2	30.1	29.9	-0.3	+1.7s
Smokeless Tobacco[d]																		
8th Grade	—	—	—	—	—	—	—	—	—	6.9	7.0	6.6	7.7	7.1	7.1	5.5	-1.6s	-1.4
10th Grade	—	—	—	—	—	—	—	—	—	10.0	9.6	10.4	10.5	9.7	8.6	8.9	+0.3	-1.1
12th Grade		—	—	—	—	—	—	—	—	—	11.4	10.7	11.1	12.2	9.8	9.7	-0.1	-1.7[k]
College Students	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Young Adults	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Steroids[h]																		
8th Grade	1.0	1.1	0.9	1.2	1.0	0.9	1.0	+0.1	0.0	0.4	0.5	0.5	0.5	0.6	0.4	0.5	+0.1	+0.1
10th Grade	1.1	1.1	1.0	1.1	1.2	1.2	1.2	0.0	+0.1	0.6	0.6	0.5	0.6	0.6	0.5	0.7	+0.2s	+0.1
12th Grade	1.4	1.1	1.2	1.3	1.5	1.4	1.4	0.0	0.0	0.8	0.6	0.7	0.9	0.7	0.7	1.0	+0.3	+0.2
College Students	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Young Adults	0.5	0.4	0.3	0.4	0.5	0.3	0.5	+0.2	0.0	0.2	0.1	0.0	0.1	0.2	0.2	0.2	0.0	0.0

(Table continued on next page)

TABLE 2-1c

Trends in 30-Day Prevalence of Daily Use of Various Drugs for Eighth, Tenth, and Twelfth Graders, College Students, and Young Adults

	Daily								
	1991	1992	1993	1994	1995	1996	1997	'96–'97 change	'91–'97 change
Marijuana/Hashish[i]									
8th Grade	0.2	0.2	0.4	0.7	0.8	1.5	1.1	-0.4ss	+0.9sss
10th Grade	0.8	0.8	1.0	2.2	2.8	3.5	3.7	+0.2	+2.9sss
12th Grade	2.0	1.9	2.4	3.6	4.6	4.9	5.8	+0.9s	+3.8sss
College Students	1.8	1.6	1.9	1.8	3.7	2.8	3.7	+0.9	+1.9ss
Young Adults	2.3	2.3	2.4	2.8	3.3	3.3	3.8	+0.5	+1.5sss
Alcohol[i,j]									
Any use									
8th Grade	0.5	0.6	0.8	—	—	—	—	—	—
			1.0	1.0	0.7	1.0	0.8	-0.2	-0.2[j]
10th Grade	1.3	1.2	1.6	—	—	—	—	—	—
			1.8	1.7	1.7	1.6	1.7	+0.1	-0.1[j]
12th Grade	3.6	3.4	2.5	—	—	—	—	—	—
			3.4	2.9	3.5	3.7	3.9	+0.2	+0.5[j]
College Students	4.1	3.7	3.9	3.7	3.0	3.2	4.5	+1.3	+0.4
Young Adults	4.9	4.5	4.5	3.9	3.9	4.0	4.6	+0.6	-0.3
Been Drunk[h,j]									
8th Grade	0.1	0.1	0.2	0.3	0.2	0.2	0.2	-0.1	0.0
10th Grade	0.2	0.3	0.4	0.4	0.6	0.4	0.6	+0.2s	+0.4sss
12th Grade	0.9	0.8	0.9	1.2	1.3	1.6	2.0	+0.4	+1.1sss
College Students	—	—	—	—	—	—	—	—	—
Young Adults	—	—	—	—	—	—	—	—	—
5+ drinks in last 2 weeks									
8th Grade	12.9	13.4	13.5	14.5	14.5	15.6	14.5	-1.1	+1.6
10th Grade	22.9	21.1	23.0	23.6	24.0	24.8	25.1	+0.3	+2.2s
12th Grade	29.8	27.9	27.5	28.2	29.8	30.2	31.3	+1.1	+1.5
College Students	42.8	41.4	40.2	40.2	38.6	38.3	40.7	+2.3	-2.1
Young Adults	34.7	34.2	34.4	33.7	32.6	33.6	34.4	+0.8	-0.3
Cigarettes									
Any use									
8th Grade	7.2	7.0	8.3	8.8	9.3	10.4	9.0	-1.4s	+1.8ss
10th Grade	12.6	12.3	14.2	14.6	16.3	18.3	18.0	-0.3	+5.4sss
12th Grade	18.5	17.2	19.0	19.4	21.6	22.2	24.6	+2.4s	+6.1sss
College Students	13.8	14.1	15.2	13.2	15.8	15.9	15.2	-0.7	+1.4
Young Adults	21.7	20.9	20.8	20.7	21.2	21.8	20.6	-1.2	-1.1
1/2 pack+/day									
8th Grade	3.1	2.9	3.5	3.6	3.4	4.3	3.5	-0.8s	+0.4
10th Grade	6.5	6.0	7.0	7.6	8.3	9.4	8.6	-0.8	+2.1sss
12th Grade	10.7	10.0	10.9	11.2	12.4	13.0	14.3	+1.3	+3.6sss
College Students	8.0	8.9	8.9	8.0	10.2	8.4	9.1	+0.6	+1.0
Young Adults	16.0	15.7	15.5	15.3	15.7	15.3	14.6	-0.6	-1.4s

(Table continued on next page)

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TABLE 2-1c (cont.)

Trends in 30-Day Prevalence of Daily Use of Various Drugs for Eighth, Tenth, and Twelfth Graders, College Students, and Young Adults

	Daily								
	1991	1992	1993	1994	1995	1996	1997	'96–'97 change	'91–'97 change
Smokeless Tobacco[d]									
8th Grade	1.6	1.8	1.5	1.9	1.2	1.5	1.0	-0.6	-0.6
10th Grade	3.3	3.0	3.3	3.0	2.7	2.2	2.2	0.0	-1.1
12th Grade	—	4.3	3.3	3.9	3.6	3.3	4.4	+1.0	+0.1[k]
College Students	—	—	—	—	—	—	—	—	—
Young Adults	—	—	—	—	—	—	—	—	—

(Footnotes are on the next page)

NOTES: Level of significance of difference between the two years: s = .05, ss = .01, sss = .001. '—' indicates data not available. '*' indicates less than .05 percent but greater than 0 percent. Any apparent inconsistency between the change estimate and the prevalence estimates for the two years is due to rounding error.

SOURCE: The Monitoring the Future Study, the University of Michigan.

Approximate Weighted Ns	1991	1992	1993	1994	1995	1996	1997
8th Graders	17,500	18,600	18,300	17,300	17,500	17,800	18,600
10th Graders	14,800	14,800	15,300	15,800	17,000	15,600	15,500
12th Graders	15,000	15,800	16,300	15,400	15,400	14,300	15,400
College Students	1,410	1,490	1,490	1,410	1,450	1,450	1,480
Young Adults	6,600	6,800	6,700	6,500	6,400	6,300	6,400

[a] For 12th graders, college students, and young adults only: Use of "any illicit drug" includes any use of marijuana, LSD, other hallucinogens, crack, other cocaine, or heroin, or any use of other opiates, stimulants, barbiturates, or tranquilizers not under a doctor's orders. For 8th and 10th graders only: The use of other opiates and barbiturates has been excluded, because these younger respondents appear to overreport use (perhaps because they include the use of nonprescription drugs in their answers).

[b] For 12th graders, college students, and young adults only: Data based on five of six forms; N is five-sixths of N indicated for each group.

[c] Inhalants are unadjusted for underreporting of amyl and butyl nitrites; hallucinogens are unadjusted for underreporting of PCP.

[d] For 8th and 10th graders only: Smokeless tobacco data based on one of two forms for 1991–96 and on two of four forms beginning in 1997; N is one-half of N indicated. MDMA data based on one form in 1996; N is one-half of N indicated. In 1997, data based on one-third of N indicated due to changes in the questionnaire forms. For 12th graders only: Data based on one form; N is one-sixth of N indicated. For college students and young adults only: Data based on two forms; N is one-third of N indicated. Questions about nitrite use were dropped from the college student and young adult questionnaires in 1995. Questions about smokeless tobacco use were dropped from the college student and young adult analyses in 1989.

[e] For 12th graders, college students, and young adults only: Data based on four of six forms; N is four-sixths of N indicated for each group.

[f] In 1995, the heroin question was changed in three of six forms for 12th graders and in one of two forms for 8th and 10th graders. Separate questions were asked for use with injection and without injection. In 1996, the heroin question was changed in the remaining 8th and 10th grade form. Data presented here represent the combined data from all forms.

[g] Only drug use which was not under a doctor's orders is included here.

[h] For 12th graders, college students, and young adults only: Data based on two of six forms; N is two-sixths of N indicated for each group.

[i] For 8th, 10th, and 12th graders only: In 1993, the question text was changed slightly in half of the forms to indicate that a "drink" meant "more than just a few sips." The data in the upper line for alcohol came from forms using the original wording, while the data in the lower line came from forms using the revised wording. In 1993, each line of data was based on one of two forms for the 8th and 10th graders and on three of six forms for the 12th graders. N is one-half of N indicated for these groups. Data for 1994–97 were based on all forms for all grades. For college students and young adults, the revision of the question text resulted in rather little change in reported prevalence. The data for all forms are used to provide the most reliable estimate of change.

[j] For 8th, 10th, and 12th graders only: The changes in the '91–'97 change columns for alcohol are actually the '93–'97 changes.

[k] For 12th graders only: The changes in the '91–'97 change columns for smokeless tobacco are actually the '92–'97 changes.

[l] Daily used is defined as use on twenty or more occasions in the past thirty days except for 5+ drinks, cigarettes, and smokeless tobacco, for which actual daily use is measured.

Chapter 3

STUDY DESIGN AND PROCEDURES

This chapter contains a description of the research design, sampling plans, and field procedures used in both the in-school surveys of the eighth-, tenth-, and twelfth-grade students and the follow-up surveys of young adults. Related methodological issues such as response rates, population coverage, and the validity of the measures are also discussed. We begin with a description of the design that has been used consistently over 23 years to survey high school seniors; then we describe the much more recently instituted design for eighth and tenth graders. Finally, the designs for the *follow-up* surveys of former twelfth graders, and former eighth and tenth graders, are covered.[7,8]

RESEARCH DESIGN AND PROCEDURES FOR THE SURVEYS OF SENIORS

The data from high school seniors are collected during the spring of each year; data collection began with the class of 1975. Each year's data collection takes place in approximately 125 to 145 public and private high schools selected to provide an accurate representative cross-section of high school seniors throughout the coterminous United States (see Figure 3-1).

The population under study. The senior year of high school was chosen as an optimal point for monitoring the drug use and related attitudes of youth for several reasons. First, completion of high school represents the end of an important developmental stage in this society, because it demarcates both the end of universal education and, for many, the end of living in the parental home. Therefore, it is a logical point at which to take stock of the cumulated influences of these two environments on American youth. Further, completion of high school represents the jumping-off point from which young people diverge into widely differing social environments and experiences, so senior year represents a good time to take a "before" measure upon which to calculate changes that may be attributable to the many environmental and role transitions that occur in young adulthood. Finally, there are some important practical advantages to building a system of data collections around samples of high school seniors. The need for systematically repeated, large-scale samples from which to make reliable estimates of change requires that considerable stress be laid on cost efficiency as well as feasibility. The last year of high school constitutes the final point at which a reasonably good national sample of an age-specific cohort can be drawn and studied economically.

The omission of dropouts. One limitation in the original study design was the exclusion of those young men and women who drop out of high school before graduation—between 15 and 20 percent of each age cohort nationally, according to U.S. Census statistics. Clearly, the omission of high school dropouts introduces biases in the estimation of certain characteristics

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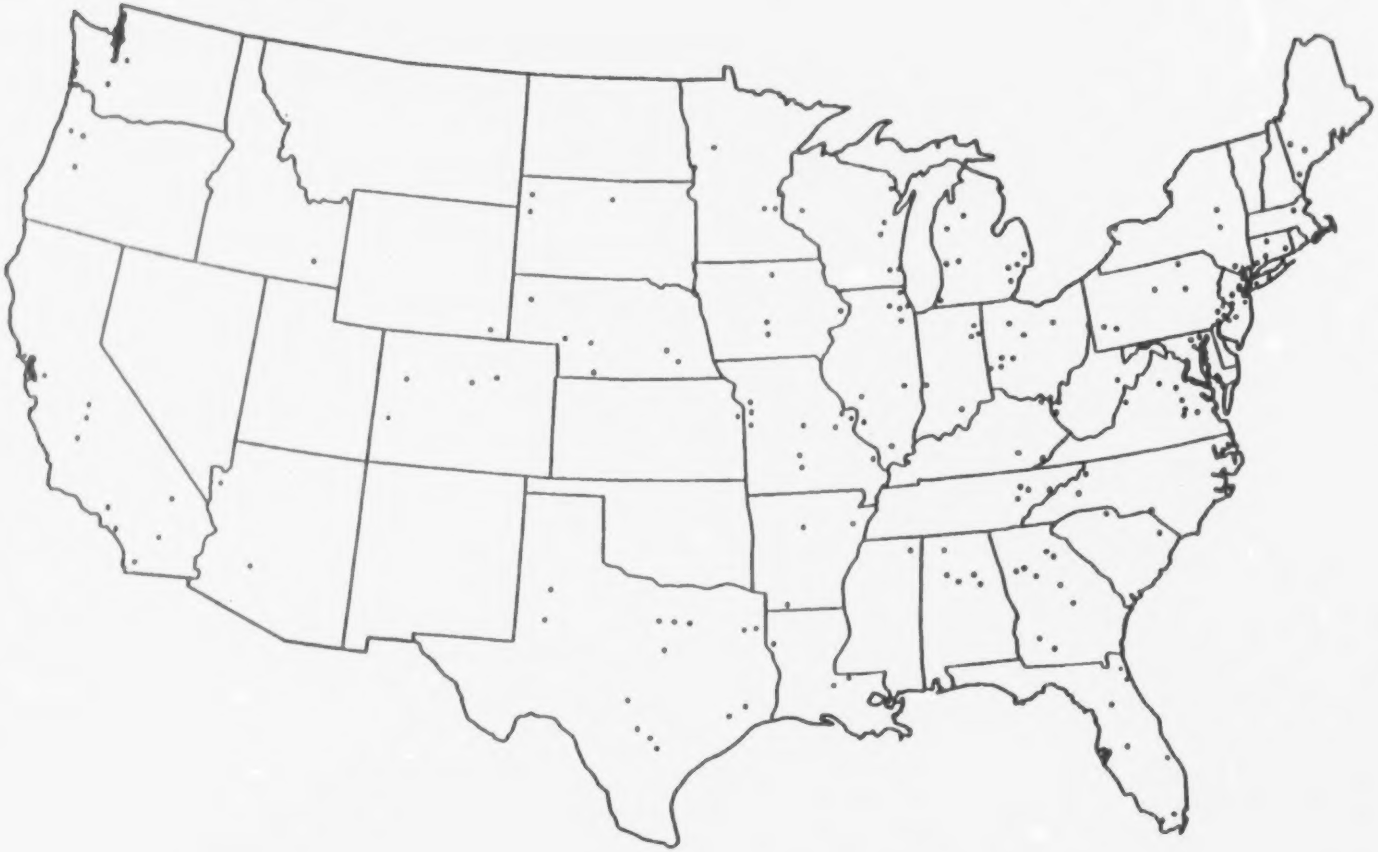
[7] For a more detailed description of the study design, see Bachman, J.G., Johnston, L.D., & O'Malley, P.M. (1996). *Monitoring the Future project after twenty-two years: Design and procedures.* (Monitoring the Future Occasional Paper 38.) Ann Arbor, MI: Institute for Social Research.

[8] For a more detailed description of the full range of research objectives of Monitoring the Future, see Johnston, L.D., O'Malley, P.M., Schulenberg, J., & Bachman, J.G. (1996). *The aims and objectives of the Monitoring the Future study and progress toward fulfilling them* (2nd ed.). Ann Arbor, MI: Institute for Social Research.

FIGURE 3-1

Counties Included in One Year's Data Collection



NOTE: Counties may contain multiple schools and up to three grade levels each.

dropouts in most instances. Appendix A to this volume addresses the likely effects of the exclusion of dropouts on estimates of prevalence of drug use and trends in drug use among the entire age cohort; the reader is referred there for a more detailed discussion of this issue.

Sampling procedures. A multi-stage random sampling procedure is used to secure the nationwide sample of high school seniors each year. Stage 1 is the selection of particular geographic areas, Stage 2 is the selection (with probability proportionate to size) of one or more high schools in each area, and Stage 3 is the selection of seniors within each high school. Within each school, up to about 350 seniors may be included. In schools with fewer seniors, the usual procedure is to include all of them in the data collection. In larger schools, a subset of seniors is selected either by randomly sampling entire classrooms or by some other unbiased, random method. Weights are assigned to compensate for differential probabilities of selection at each stage. Final weights are normalized to average 1.0 (so that the weighted number of cases equals the unweighted number of cases overall). This three-stage sampling procedure has yielded the numbers of participating schools and students over the years shown in Table 3-1.

Questionnaire administration. About ten days before the questionnaire administration date, the seniors are given flyers explaining the study. The actual questionnaire administrations are conducted by the local Institute for Social Research representatives and their assistants, following standardized procedures detailed in a project instruction manual. The questionnaires are administered in classrooms during a normal class period whenever possible; however, circumstances in some schools require the use of larger group administrations.

Questionnaire format. Because many questions are needed to cover all of the topic areas in the study, much of the questionnaire content intended for high school seniors is divided into six different questionnaire forms that are distributed to participants in an ordered sequence that ensures six virtually identical random subsamples. (Five questionnaire forms were used between 1975 and 1988.) About one-third of each questionnaire form consists of key, or "core," variables that are common to all forms. All demographic variables, and nearly all of the drug *use* variables included in this report, are contained in this core set of measures. Many of the questions dealing with attitudes, beliefs, and perceptions of relevant features of the social environment are in a single form only, and the data are thus based on one-fifth as many cases in 1975-88 (approximately 3,300) or one-sixth as many cases in 1989-1997 (approximately 2,600). All tables in this report give the sample sizes upon which the statistics are based, stated in terms of weighted numbers of cases (which are roughly equivalent to the actual numbers of cases).

RESEARCH DESIGN AND PROCEDURES FOR THE SURVEYS OF LOWER GRADES

Beginning in 1991, the study was expanded to include nationally representative samples of eighth- and tenth-grade students. These are now conducted on an annual basis.

In general, the procedures used for the annual in-school surveys of eighth- and tenth-grade students closely parallel those used for high school seniors, including the procedures for selecting schools and students, questionnaire administration, and questionnaire formats. A major exception is that only two different questionnaire forms were used in 1991-1996 (this expanded to four forms beginning in 1997) rather than the six used with seniors. Identical

TABLE 3-1

Sample Sizes and Response Rates

	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
Twelfth Grade																							
Number public schools	111	108	108	111	111	107	109	116	112	117	115	113	117	113	111	114	117	120	121	119	120	118	125
Number private schools	14	15	16	20	20	20	19	21	22	17	17	16	18	19	22	23	19	18	18	20	24	21	21
Total number schools	125	123	124	131	131	127	128	137	134	134	132	129	135	132	133	137	136	138	139	139	144	139	146
Total number students	15,791	16,678	18,436	18,924	16,662	16,524	18,267	18,348	16,947	16,499	16,502	15,713	16,843	16,795	17,142	15,676	15,483	16,251	16,763	15,929	15,876	14,824	15,963
Student response rate	78%	77%	79%	83%	82%	82%	81%	83%	84%	83%	84%	83%	84%	83%	86%	86%	83%	84%	84%	84%	84%	83%	83%
Tenth Grade																							
Number public schools	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	107	106	111	116	117	113	113
Number private schools	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	14	19	17	14	22	20	18
Total number schools	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	121	125	128	130	139	133	131
Total number students	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	14,996	14,997	15,516	16,080	17,285	15,873	15,778
Student response rate	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	87%	88%	86%	88%	87%	87%	86%
Eighth Grade																							
Number public schools	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	131	133	126	116	118	122	125
Number private schools	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	31	26	30	34	34	30	27
Total number schools	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	162	159	156	150	152	152	152
Total number students	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	17,844	19,015	18,820	17,708	17,929	18,368	19,066
Student response rate	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	90%	90%	90%	89%	89%	91%	89%

SOURCE: The Monitoring the Future Study, the University of Michigan.

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forms are used for both eighth and tenth grades, and, for the most part, questionnaire content is drawn from the twelfth-grade questionnaires. Thus, key demographic variables and measures of drug use and related attitudes and beliefs are generally identical for all three grades. The forms used in both eighth and tenth grades have a common core (Parts B and C) that parallels the core used in twelfth grade. Many fewer questions about lifestyles and values are included in the eighth- and tenth-grade forms, in part because we think that many of these attitudes are likely to be more fully formed by twelfth grade and, therefore, are best monitored there. For the national survey of eighth graders, approximately 160 schools (mostly junior high schools and middle schools) are sampled, and approximately 18,000 to 19,000 students are surveyed. For the tenth graders, approximately 130 high schools are sampled, and approximately 16,000 students are surveyed.

The research design originally called for follow-up surveys of subsamples of the eighth and tenth graders participating in the study, carried out at two-year intervals, similar to the twelfth-grade follow-up samples. In 1991-1994, this plan influenced the design of the cross-sectional studies of eighth and tenth graders in an important way. In order to "capture" many of the eighth-grade participants two years later in the normal tenth-grade cross-sectional study for that year, we selected the eighth-grade schools by drawing a sample of high schools and then selecting a sample of their feeder schools that contained eighth graders. This extra stage in the sampling process meant that many of the eighth-grade participants in, say, the 1991 cross-sectional survey were also participants in the 1993 cross-sectional survey of tenth graders. Thus, a fair amount of panel data were generated at no additional cost. However, having followed this design in 1993, we concluded that the saving in follow-up costs did not justify the complexities in sampling, administration, and interpretation. Therefore, beginning in 1994, we changed to a more simplified design in which eighth-grade schools were drawn independently of the tenth-grade school sample. (The two-year follow-up feature has been modified and is now being conducted only on the first three cohorts of students surveyed in the eighth- and tenth grades—those surveyed in 1991, 1992, and 1993.)

RESEARCH DESIGN AND PROCEDURES FOR THE FOLLOW-UP SURVEYS OF SENIORS

Beginning with the graduating class of 1976, each senior class has been followed up annually on a continuing basis after high school, for seven follow-up data collections, which corresponds to their reaching a modal age of 32.[9] From the roughly 15,000 to 17,000 seniors originally participating in a given class, a representative sample of 2,400 individuals is chosen for follow-up. In order to ensure sufficient numbers of drug users in the follow-up surveys, those seniors reporting 20 or more occasions of using marijuana, or any use of any of the other illicit drugs, in the previous 30 days are selected with higher probability (by a factor of 3.0) than the remaining seniors. Differential weighting is then used in all follow-up analyses to compensate for these differential sampling probabilities. Because those in the drug-using stratum receive a weight of only .33 in the calculation of all statistics to compensate for their over representation, the actual numbers of follow-up cases are somewhat larger than the weighted numbers reported in the tables.

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[9] Further follow-ups occur (or will occur) at half-decade intervals, beginning with age 35.

The 2,400 selected respondents from each class are randomly assigned to one of two matching groups of 1,200 each; one group is surveyed on even-numbered calendar years, while the other group is surveyed on odd-numbered years. This two-year cycle is intended to reduce respondent burden, thus yielding a better retention rate across the years.

Follow-up procedures. Using information provided by respondents at the time of the senior survey (name, address, phone number, and the name and address of someone who would always know how to reach them), mail contacts are maintained for the subset who are selected for inclusion in the follow-up panels. Newsletters are sent each year, and name and address corrections are requested. The questionnaires are sent by certified mail in the spring of each year. A check for $10.00, made payable to the respondent, is attached to the front of each questionnaire.[10] Reminder letters and postcards are sent at fixed intervals thereafter; finally, those who fail to respond receive a prompting phone call from the Survey Research Center's phone interviewing facility in Ann Arbor. If requested, a second copy of the questionnaire is sent; but no questionnaire content is administered by phone.

Panel retention rates. To date, an average of about 80% of those selected for inclusion in follow-up panels have returned questionnaires in the first follow-up after high school. The retention rate declines with time, as would be expected. The 1997 panel retention from the class of 1983—the oldest of the panels, now age 32 (14 years past their first data collection in high school)—was 55%.

Corrections for panel attrition. Because, to a modest degree, attrition is associated with drug use, we have introduced corrections into the prevalence estimates for the follow-up panels. These raise the prevalence estimates from the uncorrected ones, but only slightly. We believe the resulting estimates to be the most accurate obtainable for the population of high school senior graduates but still low for the age group as a whole, due to the omission of dropouts and absentees from the population covered by the original panels.[11]

REPRESENTATIVENESS AND VALIDITY

School participation. Schools are invited to participate in the study for a two-year period. For each school that declines to participate, a similar school (in terms of size, geographic area, urbanicity, etc.) is recruited as a replacement. In 1997, either an original school or a replacement school was obtained in 96% of the sample units. The percentage of original schools

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[10] Note that, for the Class of 1991 and all prior classes, the follow-up checks were for $5.00. The rate was raised, beginning with the class of 1992, to compensate for the effects of inflation over the life of the study. An experiment was first conducted that suggested that the increased payment was justified based on the increased panel retention it achieved.

[11] The intent of the weighting process is to correct for the effects of differential attrition on follow-up drug use estimates. Different weights are used for different substances. Cigarettes, alcohol, and marijuana each have one weight for every follow-up of each graduating class. The weights are based on the observed differences in the distribution on an index of twelfth-grade use of the relevant substance for the follow-up sample compared to the distribution based on the full base-year sample. For example, the distribution on the index of marijuana use in the 1988 follow-up of approximately 1,000 respondents from the class of 1976 was compared to the original 1976 base-year distribution for the entire participating base-year class of 17,000 respondents; and weights were derived that, when applied to the base-year data for only those participating in the 1988 follow-up, would reproduce the original base-year frequency distribution. A similar procedure is used to determine a weight for all illicit drugs other than marijuana combined. In this case, however, an average weight is derived across graduating classes. Thus, the same weight is applied, for example, to all respondents in the follow-up of 1988, regardless of when they graduated from high school.

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participating in 1997 was 50.4%. With very few exceptions, each school participating in the first year has agreed to participate in the second year, as well.

The selection of replacement schools almost entirely removes problems of bias in region, urbanicity, and the like, that might result from certain schools refusing to participate. Other potential biases could be more subtle, however. If, for example, it turned out that most schools with "drug problems" refused to participate, that would seriously bias the sample. And if any other single factor were dominant in most refusals, that also might suggest a source of serious bias. In fact, however, the reasons given for a school refusing to participate are varied and are often a function of happenstance events specific to that particular year; only a very small proportion specifically object to the drug content of the survey.

It is worth noting that the great majority of variance in drug use lies within schools, not between schools. For example, for 10th graders in 1992, between-schools variance for marijuana use was 4-6% of the total variance (depending on the specific measure); for inhalant use, 1-2%; for LSD, 2-4%; for crack cocaine, 1.0-1.5%; for alcohol use, 4-5%; and for cigarette use, 3-4%. (Eighth and twelfth grade values are similar.) If it were the case that schools differed substantially in drug use, then which particular schools participated could have a greater effect on estimates of drug use. To the extent that schools tend to be fairly similar in drug use, then which particular schools participated (within a framework that seeks national representation) would have a smaller effect on estimates of drug use. The fact that the overwhelming majority of variance in drug use lies within schools implies that, with respect to drug use, schools are for the most part, fairly similar.[12] Further, some if not most of the between-schools variance is due to differences related to region, urbanicity, etc.—factors that remain well controlled in the present sampling design because of the way in which replacement schools are selected.

Thus we are quite confident that school refusals have not seriously biased the surveys.

At each grade level, schools are selected in such a way that half of each year's sample comprises schools that participated the previous year, and half comprises schools that will participate the next year. This staggered half-sample design is used to check on possible errors in the year-to-year trend estimates due to school turnover. For example, separate sets of one-year trend estimates are computed for seniors using first the half-sample of schools that participated in both 1995 *and* 1996, then the half-sample that participated in both 1996 *and* 1997, and so on. Thus, each one-year half-sample trend estimate derived in this way is based on a constant set of about 65 schools. When the resulting trend data (examined separately for each class of drugs) are compared with trends based on the total samples of schools, the results are usually highly similar, indicating that the trend estimates are little affected by turnover or shifting refusal rates in the school samples. As would be expected, the *absolute* prevalence estimates for a given year are not as accurate using just the half-sample.

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[12] Among the schools that actually participate in the study, there is very little difference in substance use rates between the schools that were original selections, taken as a set, and the schools that were replacement schools. Averaged over the years 1991 through 1996, for grades 8 and 10 combined, the difference between original schools and replacement schools averaged less than 1% in the observed prevalence rates for monthly cigarette use, binge drinking, and annual marijuana use. (Original schools were slightly higher in cigarette and marijuana use, and slightly lower in binge drinking.)

Student participation. In 1997, completed questionnaires were obtained from 89% of all sampled students in eighth grade, 86% in tenth grade, and 83% in twelfth grade. (See Table 3-1 for response rates in earlier years.) The single most important reason that students are missed is absence from class at the time of data collection; in most cases, and for reasons of cost efficiency, we do not schedule special follow-up data collections for absent students. Students with fairly high rates of absenteeism also report above-average rates of drug use; therefore, some degree of bias is introduced into the prevalence estimates by missing the absentees. Much of that bias could be corrected through the use of special weighting based on the reported absentee rates of the students who *did* respond; however, we decided not to use such a weighting procedure because the bias in overall drug use estimates was determined to be quite small *and* because the necessary weighting procedures would have introduced greater sampling variance in the estimates. Appendix A in an earlier report[13] provides a discussion of this point, and Appendix A in the present report illustrates the changes in trend and prevalence estimates that would result if corrections for absentees had been included.

Of course, some students are not absent from class but simply refuse, when asked, to complete a questionnaire. However, the proportion of explicit refusals amounts to less than 1% of the target sample for each grade.

Sampling accuracy of the estimates. Confidence intervals (95%) are provided in Tables 4-1a through 4-1d (Chapter 4) for lifetime, annual, 30-day, and daily prevalence for eighth-, tenth-, and twelfth-grade students. As can be seen in Table 4-1a, confidence intervals for lifetime prevalence for seniors average about ±1.4% across a variety of drug classes. That is, if we took a large number of samples of this size from the universe of all schools containing twelfth graders in the coterminous United States, 95 times out of 100 the sample would yield a result that would be 1.4 percentage points or less divergent from the result we would get from a comparable massive survey of *all* seniors in all schools. This is a high level of sampling accuracy, and it should permit detection of fairly small changes from one year to the next. Confidence intervals for past 12 months, past 30 days, and daily use are generally smaller than those for lifetime use. In general, confidence intervals for eighth and tenth graders are very similar to those observed for twelfth graders. Some drugs are measured on only one or two forms (smokeless tobacco, PCP, nitrites, and others, as indicated in Table 2-1 footnotes); these drugs will have larger confidence intervals due to their smaller sample sizes. Appendix C contains information for the interested reader on how to calculate confidence intervals around other point estimates; it also provides the information needed to compare trends across time or to test the significance of differences between subgroups.

VALIDITY OF THE MEASURES OF SELF-REPORTED DRUG USE

Are sensitive behaviors such as drug use honestly reported? Like most studies dealing with sensitive behaviors, we have no direct, totally objective validation of the present measures; however, the considerable amount of existing inferential evidence strongly suggests that the self-report questions produce largely valid data. A more complete discussion of the contributing evidence that leads to this conclusion may be found in other publications; here we will only briefly summarize the evidence.[14]

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[13] Johnston, L.D., O'Malley, P.M., & Bachman, J.G. (1984). *Drugs and American high school students: 1975-1983*. DHHS (ADM) 85-1374. Washington, D.C.: U.S. Government Printing Office.

First, using a three-wave panel design, we established that the various measures of self-reported drug use have a high degree of reliability—a necessary condition for validity.[15] In essence, respondents were highly consistent in their self-reported behaviors over a three- to four-year time interval. Second, we found a high degree of consistency among logically related measures of use within the same questionnaire administration. Third, the proportion of seniors reporting some illicit drug use by senior year has reached two-thirds of all respondents in peak years and nearly 80% in some follow-up years, constituting *prima facie* evidence that the degree of under-reporting must be very limited. Fourth, the seniors' reports of use by their unnamed friends—about whom they would presumably have less reason to distort reports of use—has been highly consistent with self-reported use in the aggregate in terms of both prevalence *and* trends in prevalence, as will be discussed later in this report. Fifth, we have found self-reported drug use to relate in consistent and expected ways to a number of other attitudes, behaviors, beliefs, and social situations—in other words, there is strong evidence of "construct validity." Sixth, the missing data rates for the self-reported use questions are only very slightly higher than for the preceding nonsensitive questions, in spite of explicit instructions to respondents to leave blank those drug use questions they felt they could not answer honestly. Finally, the great majority of respondents, when asked, say they would answer such questions honestly if they were users.[16]

This is not to argue that self-reported measures of drug use are valid in all cases. In the present study we have gone to great lengths to create a situation and set of procedures in which students feel that their confidentiality will be protected. We have also tried to present a convincing case as to why such research is needed. We think the evidence suggests that a high level of validity has been obtained. Nevertheless, insofar as any remaining reporting bias exists, we believe it to be in the direction of under-reporting. Thus, we believe our estimates to be lower than their true values, even for the obtained samples, but not substantially so.

Consistency and the measurement of trends. One further point is worth noting in a discussion of the validity of the findings. The Monitoring the Future project is designed to be sensitive to changes from one time period to another. Accordingly, the measures and procedures have been standardized and applied consistently across each data collection. To the extent that any biases remain because of limits in school and/or student participation, and to the extent that there are distortions (lack of validity) in the responses of some students, it seems very likely that such problems will exist in much the same way from one year to the next. In other words, biases in the survey estimates will tend to be consistent from one year to another, which means that our measurement of *trends* should be affected very little by any such biases. The smooth and consistent nature of most trend curves reported for the various drugs provides rather compelling empirical support for this assertion.

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[14] Johnston, L.D., & O'Malley, P.M. (1985). Issues of validity and population coverage in student surveys of drug use. In B.A. Rouse, N.J. Kozel, & L.G. Richards (Eds.), *Self-report methods of estimating drug use: Meeting current challenges to validity* (NIDA Research Monograph No. 57 (ADM) 85-1402). Washington, D.C.: U.S. Government Printing Office; Johnston, L.D., O'Malley, P.M., & Bachman, J.G. (1984). *Drugs and American high school students: 1975-1983*. DHHS (ADM) 85-1374. Washington, D.C.: U.S. Government Printing Office; Wallace, J.M., Jr., & Bachman, J.G. (1993). Validity of self-reports in student-based studies on minority populations: Issues and concerns. In M. de LaRosa (Ed.), *Drug abuse among minority youth: Advances in research and methodology*. NIDA Research Monograph. Rockville, MD: National Institute on Drug Abuse.

[15] O'Malley, P.M., Bachman, J.G., & Johnston, L.D. (1983). Reliability and consistency in self-reports of drug use. *International Journal of the Addictions*, *18*, 805-824.

[16] For a discussion of reliability and validity of student self-report measures of drug use across varied cultural settings, see also Johnston, L.D., Driessen, F.M.H.M., & Kokkevi, A. (1994). *Surveying student drug misuse: A six-country pilot study*. Strasbourg, France: Council of Europe.

Chapter 4

PREVALENCE OF DRUG USE AMONG EIGHTH-, TENTH-, AND TWELFTH-GRADE STUDENTS

This chapter presents the 1997 levels of drug use reported by the national samples of eighth-, tenth-, and twelfth-grade students surveyed. Both *prevalence* and *frequency* data are included for lifetime use, use in the past 12 months, and use in the prior 30 days. The prevalence of current daily use also is provided, as is the prevalence and frequency of having five or more drinks in a row. For cigarettes, rates of the daily use of a half-pack or more are included along with rates of daily use. In addition, for each grade level comparisons are given for key subgroups in the population based on six cross-break dimensions: gender, college plans, region of the country, population density (or urbanicity), socioeconomic status (as measured by the average education level of the parents), and racial/ethnic identification.

It should be noted that all of the prevalence statistics given in this section are based on students in attendance on the day of the survey administration. Selected prevalence rate estimates for twelfth grade students, reflecting adjustments for absentees as well as for dropouts, may be found in Appendix A to this report (17% of twelfth graders were absent from the 1997 administration). For eighth and tenth graders the adjustments for absenteeism and dropping out would be much smaller than those given for twelfth graders in Appendix A, because eighth and tenth graders have lower rates of absenteeism (11% and 14%, respectively, in 1997) and much lower rates of dropping out.

PREVALENCE AND FREQUENCY OF DRUG USE IN 1997: ALL STUDENTS

Prevalence of Lifetime, Annual, and 30-Day Use

Prevalence of use estimates are provided in Tables 4-1a through 4-1d for lifetime, past 12 months, past 30 days, and daily use in the past 30 days, respectively. These tables also include the 95% confidence intervals around each estimate, which means that, if samples of this size and type were drawn repeatedly from all students at that grade level in the coterminous United States, the observed prevalence rate should fall within the confidence interval 95 times out of 100. The confidence intervals take into account the effects of sample stratification, clustering, and unequal weighting. Of course, the single best estimate that we can make is actual observed value. Table 4-2 combines the estimates for all prevalence periods and grades into a single page to facilitate comparisons, and Table 4-3 gives the breakdowns for ***heroin*** by the mode of administration.

Table 4-4a provides data on frequency of use for lifetime, 12-month, and 30-day periods. Table 4-4b provides additional frequency estimates for alcohol, cigarettes, and smokeless tobacco.

TABLE 4-1a

Ninety-Five Percent Confidence Limits: Lifetime Prevalence Eighth, Tenth, and Twelfth Graders, 1997

(Approx. Ns: 8th grade = 18,600, 10th grade = 15,500, 12th grade = 15,400)

	8th Grade			10th Grade			12th Grade		
	Lower limit	Observed estimate	Upper limit	Lower limit	Observed estimate	Upper limit	Lower limit	Observed estimate	Upper limit
Any Illicit Drug[a]	27.8	29.4	31.0	45.2	47.3	49.5	51.7	54.3	56.9
Any Illicit Drug[a] Other than Marijuana	16.4	17.7	19.0	23.3	25.0	26.7	28.1	30.0	32.0
Any Illicit Drug[a,b] Including Inhalants	36.4	38.1	39.8	48.7	50.9	53.1	53.5	56.3	59.1
Marijuana/Hashish	21.2	22.6	24.1	40.2	42.3	44.4	47.0	49.6	52.2
Inhalants[b]	19.7	21.0	22.3	17.0	18.3	19.7	14.8	16.1	17.5
Inhalants, Adjusted[b,c]	—	—	—	—	—	—	15.5	16.9	18.4
Amyl & Butyl Nitrites[d]	—	—	—	—	—	—	1.4	2.0	2.9
Hallucinogens	4.6	5.4	6.3	9.4	10.5	11.8	13.7	15.1	16.6
Hallucinogens, Adjusted[c]	—	—	—	—	—	—	14.0	15.4	16.9
LSD	4.0	4.7	5.5	8.4	9.5	10.7	12.3	13.6	15.0
Hallucinogens Other than LSD	2.2	2.6	3.0	4.3	4.8	5.4	6.8	7.5	8.2
PCP[d]	—	—	—	—	—	—	3.0	3.9	5.1
MDMA (Ecstasy)[d]	2.6	3.2	3.9	4.9	5.7	6.7	5.6	6.9	8.4
Cocaine	3.7	4.4	5.2	6.2	7.1	8.2	7.7	8.7	9.9
Crack	2.4	2.7	3.0	3.2	3.6	4.0	3.5	3.9	4.4
Other Cocaine[e]	2.9	3.5	4.2	5.2	6.1	7.1	7.0	8.2	9.6
Heroin	1.8	2.1	2.4	1.8	2.1	2.4	1.8	2.1	2.4
Other Opiates[f]	—	—	—	—	—	—	8.9	9.7	10.5
Stimulants[f]	11.3	12.3	13.4	15.7	17.0	18.3	15.3	16.5	17.8
Crystal Meth. (Ice)[g]	—	—	—	—	—	—	3.7	4.4	5.3
Sedatives[f,h]	—	—	—	—	—	—	8.0	8.7	9.5
Barbiturates[f]	—	—	—	—	—	—	7.4	8.1	8.9
Methaqualone[e,f]	—	—	—	—	—	—	1.1	1.7	2.6
Tranquilizers[f]	4.3	4.8	5.4	6.6	7.3	8.0	7.1	7.8	8.6
Alcohol	52.2	53.8	55.4	70.4	72.0	73.6	80.3	81.7	83.1
Been Drunk[g]	23.8	25.2	26.6	47.6	49.4	51.2	61.2	64.2	67.1
Cigarettes	45.6	47.3	49.0	58.4	60.2	62.0	63.6	65.4	67.1
Smokeless Tobacco[d]	15.1	16.8	18.6	24.1	26.3	28.6	21.6	25.3	29.4
Steroids[g]	1.5	1.8	2.1	1.7	2.0	2.3	1.9	2.4	3.1

NOTE: '—' indicates data not available.
SOURCE: The Monitoring the Future Study, the University of Michigan.

[a] For 12th graders only: Use of "any illicit drugs" includes any use of marijuana, LSD, other hallucinogens, crack, other cocaine, or heroin, or any use of other opiates, stimulants, barbiturates, or tranquilizers not under a doctor's orders. For 8th and 10th graders only: The use of other opiates and barbiturates has been excluded, because these younger respondents appear to overreport use (perhaps because they include the use of nonprescription drugs in their answers).

[b] For 12th graders only: Data based on five of six forms; N is five-sixths of N indicated.

[c] For 12th graders only: Adjusted for underreporting of certain drugs. See text for details.

[d] For 8th and 10th graders only: Smokeless tobacco data based on two of four forms; N is one-half of N indicated. MDMA data based on one-third of N indicated due to changes in the questionnaire forms. For 12th graders only: Data based on one of six forms; N is one-sixth of N indicated.

[e] For 12th graders only: Data based on four of six forms; N is four-sixths of N indicated.

[f] Only drug use which was not under a doctor's orders is included here.

[g] For 12th graders only: Data based on two of six forms; N is two-sixths of N indicated.

[h] For 12th graders only: Data based on six forms adjusted by one form data.

TABLE 4-1b

Ninety-Five Percent Confidence Limits: Annual Prevalence Eighth, Tenth, and Twelfth Graders, 1997

(Approx. Ns: 8th grade = 18,600, 10th grade = 15,500, 12th grade = 15,400)

	8th Grade			10th Grade			12th Grade		
	Lower limit	Observed estimate	Upper limit	Lower limit	Observed estimate	Upper limit	Lower limit	Observed estimate	Upper limit
Any Illicit Drug[a]	20.8	22.1	23.4	36.6	38.5	40.4	39.9	42.4	44.9
Any Illicit Drug[a] Other than Marijuana	10.8	11.8	12.8	16.9	18.2	19.6	19.1	20.7	22.4
Any Illicit Drug[a,b] Including Inhalants	25.8	27.2	28.6	38.4	40.3	42.2	40.6	43.3	46.1
Marijuana/Hashish	16.5	17.7	18.9	33.0	34.8	36.7	36.1	38.5	41.0
Inhalants[b]	10.9	11.8	12.8	7.9	8.7	9.6	5.9	6.7	7.6
Inhalants, Adjusted[b,c]	—	—	—	—	—	—	6.4	7.3	8.3
Amyl & Butyl Nitrites[d]	—	—	—	—	—	—	0.8	1.2	1.8
Hallucinogens	3.1	3.7	4.3	6.7	7.6	8.6	8.8	9.8	10.9
Hallucinogens, Adjusted[c]	—	—	—	—	—	—	9.0	10.0	11.1
LSD	2.7	3.2	3.8	5.9	6.7	7.6	7.5	8.4	9.4
Hallucinogens Other than LSD	1.5	1.8	2.1	2.9	3.3	3.8	4.1	4.6	5.2
PCP[d]	—	—	—	—	—	—	1.7	2.3	3.1
MDMA (Ecstasy)[d]	1.9	2.3	2.8	3.3	3.9	4.6	3.2	4.0	5.0
Cocaine	2.3	2.8	3.4	4.0	4.7	5.5	4.8	5.5	6.4
Crack	1.5	1.7	1.9	1.9	2.2	2.5	2.1	2.4	2.7
Other Cocaine[e]	1.8	2.2	2.7	3.5	4.1	4.8	4.1	5.0	6.0
Heroin	1.1	1.3	1.5	1.2	1.4	1.6	1.0	1.2	1.4
Other Opiates[f]	—	—	—	—	—	—	5.6	6.2	6.8
Stimulants[f]	7.3	8.1	8.9	11.1	12.1	13.2	9.3	10.2	11.2
Crystal Meth. (Ice)[g]	—	—	—	—	—	—	1.8	2.3	2.9
Sedatives[f,h]	—	—	—	—	—	—	4.9	5.4	6.0
Barbiturates[f]	—	—	—	—	—	—	4.6	5.1	5.7
Methaqualone[d,f]	—	—	—	—	—	—	0.6	1.0	1.6
Tranquilizers[f]	2.5	2.9	3.3	4.4	4.9	5.5	4.2	4.7	5.3
Alcohol	43.9	45.5	47.1	63.5	65.2	66.9	73.2	74.8	76.3
Been Drunk[g]	17.2	18.4	19.7	39.0	40.7	42.5	50.1	53.2	56.3
Cigarettes	—	—	—	—	—	—	—	—	—
Smokeless Tobacco[d]	—	—	—	—	—	—	—	—	—
Steroids[e]	0.8	1.0	1.2	1.0	1.2	1.4	1.1	1.4	1.9

NOTE: '—' indicates data not available.
SOURCE: The Monitoring the Future Study, the University of Michigan.

[a] For 12th graders only: Use of "any illicit drugs" includes any use of marijuana, LSD, other hallucinogens, crack, other cocaine, or heroin, or any use of other opiates, stimulants, barbiturates, or tranquilizers not under a doctor's orders. For 8th and 10th graders only: The use of other opiates and barbiturates has been excluded, because these younger respondents appear to overreport use (perhaps because they include the use of nonprescription drugs in their answers).

[b] For 12th graders only: Data based on five of six forms; N is five-sixths of N indicated.

[c] For 12th graders only: Adjusted for underreporting of certain drugs. See text for details.

[d] For 8th and 10th graders only: Smokeless tobacco data based on two of four forms; N is one-half of N indicated. MDMA data based on one-third of N indicated due to changes in the questionnaire forms. For 12th graders only: Data based on one of six forms; N is one-sixth of N indicated.

[e] For 12th graders only: Data based on four of six forms; N is four-sixths of N indicated.

[f] Only drug use which was not under a doctor's orders is included here.

[g] For 12th graders only: Data based on two of six forms; N is two-sixths of N indicated.

[h] For 12th graders only: Data based on six forms adjusted by one form data.

TABLE 4-1c

Ninety-Five Percent Confidence Limits: Thirty-Day Prevalence Eighth, Tenth, and Twelfth Graders, 1997

(Approx. Ns: 8th grade = 18,600, 10th grade = 15,500, 12th grade = 15,400)

	8th Grade			10th Grade			12th Grade		
	Lower limit	Observed estimate	Upper limit	Lower limit	Observed estimate	Upper limit	Lower limit	Observed estimate	Upper limit
Any Illicit Drug[a]	11.9	12.9	13.9	21.6	23.0	24.5	24.3	26.2	28.2
Any Illicit Drug[a] Other than Marijuana	5.4	6.0	6.7	8.0	8.8	9.7	9.7	10.7	11.8
Any Illicit Drug[a,b] Including Inhalants	14.9	16.0	17.1	22.7	24.1	25.6	24.8	26.9	29.1
Marijuana/Hashish	9.3	10.2	11.1	19.2	20.5	21.9	21.8	23.7	25.7
Inhalants[b]	5.1	5.6	6.1	2.6	3.0	3.4	2.1	2.5	3.0
Inhalants, Adjusted[b,c]	—	—	—	—	—	—	2.5	2.9	3.4
Amyl & Butyl Nitrites[d]	—	—	—	—	—	—	0.4	0.7	1.2
Hallucinogens	1.5	1.8	2.2	2.8	3.3	3.8	3.4	3.9	4.5
Hallucinogens, Adjusted[c]	—	—	—	—	—	—	3.6	4.1	4.7
LSD	1.2	1.5	1.8	2.4	2.8	3.3	2.6	3.1	3.6
Hallucinogens Other than LSD	0.6	0.7	0.9	1.0	1.2	1.4	1.5	1.7	2.0
PCP[d]	—	—	—	—	—	—	0.4	0.7	1.2
MDMA (Ecstasy)[d]	0.7	1.0	1.4	1.0	1.3	1.7	1.1	1.6	2.3
Cocaine	0.9	1.1	1.4	1.6	2.0	2.4	1.9	2.3	2.8
Crack	0.6	0.7	0.9	0.7	0.9	1.1	0.7	0.9	1.1
Other Cocaine[e]	0.6	0.8	1.1	1.3	1.6	2.0	1.6	2.0	2.5
Heroin	0.5	0.6	0.8	0.5	0.6	0.8	0.4	0.5	0.7
Other Opiates[f]	—	—	—	—	—	—	2.0	2.3	2.6
Stimulants[f]	3.4	3.8	4.2	4.6	5.1	5.7	4.3	4.8	5.4
Crystal Meth. (Ice)[g]	—	—	—	—	—	—	0.6	0.8	1.2
Sedatives[f,h]	—	—	—	—	—	—	1.8	2.1	2.4
Barbiturates[f]	—	—	—	—	—	—	1.8	2.1	2.4
Methaqualone[d,f]	—	—	—	—	—	—	0.1	0.3	0.7
Tranquilizers[f]	1.0	1.2	1.4	1.9	2.2	2.5	1.5	1.8	2.1
Alcohol	23.1	24.5	25.9	38.4	40.1	41.9	50.9	52.7	54.5
Been Drunk[g]	7.3	8.2	9.1	20.9	22.4	23.9	31.3	34.2	37.2
Cigarettes	18.1	19.4	20.8	28.2	29.8	31.5	34.8	36.5	38.3
Smokeless Tobacco[d]	4.5	5.5	6.7	7.5	8.9	10.5	7.4	9.7	12.7
Steroids[g]	0.4	0.5	0.6	0.6	0.7	0.9	0.7	1.0	1.4

NOTE: '—' indicates data not available.
SOURCE: The Monitoring the Future Study, the University of Michigan.

[a] For 12th graders only: Use of "any illicit drugs" includes any use of marijuana, LSD, other hallucinogens, crack, other cocaine, or heroin, or any use of other opiates, stimulants, barbiturates, or tranquilizers not under a doctor's orders. For 8th and 10th graders only: The use of other opiates and barbiturates has been excluded, because these younger respondents appear to overreport use (perhaps because they include the use of nonprescription drugs in their answers).
[b] For 12th graders only: Data based on five of six forms; N is five-sixths of N indicated.
[c] For 12th graders only: Adjusted for underreporting of certain drugs. See text for details.
[d] For 8th and 10th graders only: Smokeless tobacco data based on two of four forms; N is one-half of N indicated. MDMA data based on one-third of N indicated due to changes in the questionnaire forms. For 12th graders only: Data based on one of six forms; N is one-sixth of N indicated.
[e] For 12th graders only: Data based on four of six forms; N is four-sixths of N indicated.
[f] Only drug use which was not under a doctor's orders is included here.
[g] For 12th graders only: Data based on two of six forms; N is two-sixths of N indicated.
[h] For 12th graders only: Data based on six forms adjusted by one form data.

TABLE 4-1d

Ninety-Five Percent Confidence Limits: Daily Prevalence Eighth, Tenth, and Twelfth Graders, 1997

(Approx. Ns: 8th grade = 18,600, 10th grade = 15,500, 12th grade = 15,400)

	8th Grade			10th Grade			12th Grade		
	Lower limit	Observed estimate	Upper limit	Lower limit	Observed estimate	Upper limit	Lower limit	Observed estimate	Upper limit
Marijuana/Hashish[a]	0.9	1.1	1.3	3.3	3.7	4.1	5.1	5.8	6.5
Alcohol									
Daily[a]	0.7	0.8	1.0	1.5	1.7	2.0	3.6	3.9	4.3
5+ drinks in last 2 weeks	13.4	14.5	15.7	23.6	25.1	26.7	29.7	31.3	33.0
Cigarettes									
Daily	8.1	9.0	10.0	16.6	18.0	19.4	23.1	24.6	26.2
1/2 pack+/day	3.0	3.5	4.1	7.8	8.6	9.5	13.2	14.3	15.4
Smokeless Tobacco[b]	0.6	1.0	1.5	1.6	2.2	3.1	2.9	4.4	6.6

NOTE: '—' indicates data not available.
SOURCE: The Monitoring the Future Study, the University of Michigan.

[a] Daily use of marijuana and alcohol is defined as use on twenty or more occasions in the past thirty days.

[b] For 8th and 10th graders only: Data based on two of four forms; N is one-half of N indicated. For 12th graders only: Data based on one of six forms; N is one-sixth of N indicated.

- Half of all seniors (54%) reported ***any illicit drug use*** at some time in their lives (see Table 4-2). Some 47% of tenth graders and 29% of eighth graders said they have used an illicit drug at some time.[17]

- Of all the students in each grade reporting some illicit drug use in their lifetime, a significant proportion reported using *only* ***marijuana***: 40% of all eighth-grade users of any illicit drug (or 12% of the total eighth-grade sample), 47% of all tenth-grade users of any illicit drug (or 22% of the total tenth-grade sample), and 45% of the twelfth-grade users of any illicit drug (or 24% of the total twelfth-grade sample). Put another way, more than half of those students at each grade level who have ever used an illicit drug have used something in addition to (or other than) marijuana.

- When inhalants are also included in the index of illicit drug use, the proportions who can be described as having ever used an illicit drug rise, especially for eighth graders. The percentages using ***any illicit drug including inhalants*** in their lifetime are 38% for eighth graders, 51% for tenth graders, and 56% for twelfth graders.

- ***Marijuana*** is by far the most widely used illicit drug. Fifty percent of seniors reported some marijuana use in their lifetime, 39% reported some use in the past year, and 24% reported some use in the past month. Among tenth graders, the corresponding rates are 42%, 35%, and 21%, respectively. Even among eighth-grade students, marijuana has been used by almost one in four (23%), with 18% reporting use in the prior year and 10% use in the prior month. Current daily use of marijuana (defined as use on 20 or more occasions in the past 30 days) is also noteworthy. One in 17 twelfth graders (5.8%) uses marijuana daily, as do one in 27 tenth graders (3.7%) and about one in 90 eighth graders (1.1%).

- ***Inhalants*** have become an important class of drugs, showing the second highest lifetime prevalence rate among eighth, tenth, and twelfth graders of any of the illicitly used drugs, with lifetime prevalence rates of 21%, 18%, and 16%, respectively. However, in terms of any use in the past 30 days (current use), inhalants rank lower in the upper grade levels because many who used them at a younger age have discontinued use.

- Only 2% of seniors have tried the specific class of inhalants known as ***amyl and butyl nitrites***. These inhalants have been sold legally in the past and go by the street names "poppers" or "snappers" and such brand names as Locker Room and Rush. When questions specifically about

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[17] For twelfth graders, use of "other illicit drugs" includes any use of hallucinogens, cocaine, or heroin ***or*** any use of other opiates, stimulants, barbiturates, methaqualone (excluded since 1990), or tranquilizers that are not under a doctor's orders. For eighth and tenth graders, the use of other opiates and barbiturates has been excluded both from the illicit drug indexes and from separate presentation in this volume. Questions on these drugs were included in the questionnaires given to eighth and tenth graders, but the results led us to believe that some respondents were including nonprescription drugs in their answers, resulting in exaggerated prevalence rates.

TABLE 4-2

Prevalence of Use of Various Drugs Eighth, Tenth, and Twelfth Graders, 1997

	Lifetime			Annual			30-Day			Daily		
Grade:	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th
Approx. N =	*18600*	*15500*	*15400*	*18600*	*15500*	*15400*	*18600*	*15500*	*15400*	*18600*	*15500*	*15400*
Any Illicit Drug[a]	29.4	47.3	54.3	22.1	38.5	42.4	12.9	23.0	26.2	—	—	—
Any Illicit Drug[a] Other Than Marijuana	17.7	25.0	30.0	11.8	18.2	20.7	6.0	8.8	10.7	—	—	—
Any Illicit Drug[a,b] Including Inhalants	38.1	50.9	56.3	27.2	40.3	43.3	16.0	24.1	26.9	—	—	—
Marijuana/Hashish	22.6	42.3	49.6	17.7	34.8	38.5	10.2	20.5	23.7	1.1	3.7	5.8
Inhalants[b]	21.0	18.3	16.1	11.8	8.7	6.7	5.6	3.0	2.5	—	—	0.1
Inhalants, Adjusted[b,c]	—	—	16.9	—	—	7.3	—	—	2.9	—	—	0.2
Amyl/Butyl Nitrites[d]	—	—	2.0	—	—	1.2	—	—	0.7	—	—	0.1
Hallucinogens	5.4	10.5	15.1	3.7	7.6	9.8	1.8	3.3	3.9	—	—	0.3
Hallucinogens, Adjusted[c]	—	—	15.4	—	—	10.0	—	—	4.1	—	—	0.4
LSD	4.7	9.5	13.6	3.2	6.7	8.4	1.5	2.8	3.1	—	—	0.2
Hallucinogens Other Than LSD	2.6	4.8	7.5	1.8	3.3	4.6	0.7	1.2	1.7	—	—	0.1
PCP[d]	—	—	3.9	—	—	2.3	—	—	0.7	—	—	0.1
MDMA (Ecstasy)[d]	3.2	5.7	6.9	2.3	3.9	4.0	1.0	1.3	1.6	—	—	0.1
Cocaine	4.4	7.1	8.7	2.8	4.7	5.5	1.1	2.0	2.3	—	—	0.2
Crack	2.7	3.6	3.9	1.7	2.2	2.4	0.7	0.9	0.9	—	—	0.1
Other Cocaine[e]	3.5	6.1	8.2	2.2	4.1	5.0	0.8	1.6	2.0	—	—	0.1
Heroin[f]	2.1	2.1	2.1	1.3	1.4	1.2	0.6	0.6	0.5	—	—	0.1
Other Opiates[g]	—	—	9.7	—	—	6.2	—	—	2.3	—	—	0.2
Stimulants[g]	12.3	17.0	16.5	8.1	12.1	10.2	3.8	5.1	4.8	—	—	0.3
Crystal Meth. (Ice)[h]	—	—	4.4	—	—	2.3	—	—	0.8	—	—	0.1
Sedatives[g,i]	—	—	8.7	—	—	5.4	—	—	2.1	—	—	0.1
Barbiturates[g]	—	—	8.1	—	—	5.1	—	—	2.1	—	—	0.1
Methaqualone[d,g]	—	—	1.7	—	—	1.0	—	—	0.3	—	—	0.1
Tranquilizers[g]	4.8	7.3	7.8	2.9	4.9	4.7	1.2	2.2	1.8	—	—	0.1
Alcohol												
Any use	53.8	72.0	81.7	45.5	65.2	74.8	24.5	40.1	52.7	0.8	1.7	3.9
Been Drunk[h]	25.2	49.4	64.2	18.4	40.7	53.2	8.2	22.4	34.2	0.2	0.6	2.0
5+ drinks in last 2 weeks	—	—	—	—	—	—	—	—	—	14.5	25.1	31.3
Cigarettes												
Any use	47.3	60.2	65.4	—	—	—	19.4	29.8	36.5	9.0	18.0	24.6
1/2 pack+/day	—	—	—	—	—	—	—	—	—	3.5	8.6	14.3
Smokeless Tobacco[d]	16.8	26.3	25.3	—	—	—	5.5	8.9	9.7	1.0	2.2	4.4
Steroids[h]	1.8	2.0	2.4	1.0	1.2	1.4	0.5	0.7	1.0	—	—	0.3

NOTES: '—' indicates data not available.
SOURCE: The Monitoring the Future Study, the University of Michigan.

[a] For 12th graders only: Use of "any illicit drugs" includes any use of marijuana, LSD, other hallucinogens, crack, other cocaine, or heroin, or any use of other opiates, stimulants, barbiturates, or tranquilizers not under a doctor's orders. For 8th and 10th graders only: The use of other opiates and barbiturates has been excluded, because these younger respondents appear to overreport use (perhaps because they include the use of nonprescription drugs in their answers).

[b] For 12th graders only: Data based on five of six forms; N is five-sixths of N indicated.

[c] For 12th graders only: Adjusted for underreporting of certain drugs. See text for details.

[d] For 8th and 10th graders only: Smokeless tobacco data based on two of four forms; N is one-half of N indicated. MDMA data based on one-third of N indicated due to changes in the questionnaire forms. For 12th graders only: Data based on one of six forms; N is one-sixth of N indicated.

[e] For 12th graders only: Data based on four of six forms; N is four-sixths of N indicated.

[f] In 1995, the heroin question was changed in three of six forms for 12th graders and in one of two forms for 8th and 10th graders. Separate questions were asked for use with injection and without injection. Data presented here represent the combined data from all forms. In 1996, the heroin question was changed in the remaining 8th and 10th grade form.

[g] Only drug use which was not under a doctor's orders is included here.

[h] For 12th graders only: Data based on two of six forms; N is two-sixths of N indicated.

[i] For 12th graders only: Data based on six forms adjusted by one form data.

nitrite use were included for the first time in one 1979 senior questionnaire form, we discovered that some users of amyl and butyl nitrites did not report themselves as inhalant users, although they should have. We were able to make estimates of the degree to which inhalant use was being under-reported. As a result, we introduced ***inhalants adjusted*** prevalence estimates, which correct for the under-inclusion of nitrite use. Such correction has made very little difference in recent years because of the low rates of nitrite use.[18]

- Inhalants are followed closely in the rankings by ***stimulants***, with lifetime prevalence rates of 12% for eighth graders, 17% for tenth graders, and 17% for twelfth graders.

- ***Hallucinogens*** are the next most widely used class of substances. Lifetime prevalence is 5% for eighth graders, 11% for tenth graders, and 15% for twelfth graders. Hallucinogen prevalence rates rank this high primarily due to the prevalence of ***LSD*** use (5%, 10%, and 14%, respectively).

- When specific questions about ***PCP*** use were added, in 1979, we discovered that some users of PCP did not report themselves as users of hallucinogens, even though PCP is explicitly included as an example in the questions about hallucinogens. Thus, from 1979 onward, we have included the ***hallucinogens adjusted*** prevalence and trend estimates for seniors to correct for this known under-reporting. Again, such correction has made very little difference in recent years among seniors, because the rate of PCP use is so low.[2]

- Lifetime prevalence among seniors for the specific hallucinogenic drug ***PCP*** now stands at 3.9%, substantially lower than the lifetime prevalence of the other most widely used hallucinogen, ***LSD*** (13.6%).

- Lifetime prevalence rates for ***cocaine*** use by eighth, tenth, and twelfth graders are 4.4%, 7.1%, and 8.7%, respectively.

- ***Crack***, a form of cocaine that comes in small chunks or "rocks," can be smoked to produce a rapid and intense high. It has a relatively low prevalence in all grade levels: a lifetime prevalence of 2.7% for eighth graders, 3.6% for tenth graders, and 3.9% for twelfth graders.

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[18] Because the data to adjust inhalant and hallucinogen use for seniors are available from only a single questionnaire form in a given year, the original uncorrected variables will be used in most relational analyses. We believe relational analyses will be least affected by these underestimates and that the most serious impact is on prevalence estimates, which have been adjusted appropriately. Today, the very low levels of use for nitrites and PCP–the two drugs that were used to adjust the estimates for inhalants and hallucinogens, respectively–are so low that these adjustments are hardly relevant any longer. Therefore, questions about their use were not even included in the eighth- and tenth-grade questionnaires.

Of all students reporting any cocaine use, a significant proportion have some experience with crack: nearly two-thirds of the eighth graders (62%), one-half of the tenth graders (50%), and nearly one-half of the twelfth graders (44%) who reported any cocaine use reported using crack.

- ***Heroin*** is the least commonly used of the illicit drugs for each grade level. Lifetime use is 2.1% at all three grade levels (about one in every fifty students). The unusual pattern of younger students reporting an equal or higher prevalence level appears in a number of studies, and it may reflect the fact that youngsters who use heroin at an early age are considerably more likely than average to drop out of high school. It is also possible that the "noise" level is slightly higher in the earlier grades, with slightly more false reporting, either intentionally or unintentionally.

  For many years the heroin available in the United States had such a low purity that the only practical way to ingest it was by injection, usually intravenously. However, due to high production at the world level, purity has risen very substantially and, as a result, smoking and snorting have become more common modes of ingestion. Because of these changes, we added questions, in 1995, on heroin use with and without a needle. We found that significant proportions of those reporting any heroin use in the past 12 months indicated using only *without* a needle: this is true of more than one-third of the eighth-grade heroin users in 1997 (0.5% out of the 1.3% indicating any use) and one-half of the tenth- and twelfth-grade users (0.7% out of 1.4%). In addition, roughly half of the remaining users in each grade reported use *both* with and without a needle (see Table 4-3).

- ***Opiates other than heroin*** are in the middle ranking for seniors (9.7% lifetime prevalence). (Data for eighth and tenth graders are not reported for opiates other than heroin because the data are of questionable validity.)

- ***Tranquilizers*** also fall in the middle of the prevalence rankings of illicit drugs, with lifetime prevalence rates of 4.8%, 7.3%, and 7.8% for grades 8, 10, and 12, respectively.

- Within the general class of sedatives, the specific drug ***methaqualone*** is used by considerably fewer seniors (1.7% lifetime prevalence) than the much broader subclass of sedatives, ***barbiturates*** (8.1% lifetime prevalence). Because methaqualone use has become so limited, questions about its use have not been included in the eighth- and tenth-grade questionnaires.

- The illicit drug classes remain in roughly the same order whether ranked by lifetime, annual, or monthly prevalence, as the data in Figure 4-1 illustrate. The only important change in ranking occurs for ***inhalant use*** among the tenth and twelfth graders, for whom inhalants rank lower in terms of current use than was true for lifetime use, because use of a number of the inhalants, such as glues and aerosols, tends to be discontinued at a relatively early age. Among the eighth graders, however, it should be noted that one in eight (11.8%) sniffed or "huffed" some inhalant in the prior 12 months, and one in eighteen (5.6%) did so in the 30 days prior to the survey.

- Use of either of the two major licit drugs, alcohol and cigarettes, remains more widespread than use of any of the illicit drugs. Four out of every five students (82%) have at least tried ***alcohol*** by twelfth grade, and half of all twelfth graders (53%) reported using it in the month prior to the survey (Table 4-2). Even among eighth graders, the number of students who reported some alcohol use in their life is high: more than half (54%) said they have tried alcohol and a quarter (25%) are current (past 30 days) drinkers.[19]

- Of greater concern than just any use of alcohol is its use to the point of inebriation: 25% of the eighth graders, 49% of the tenth graders, and 64% of the twelfth graders said they have "***been drunk***" at least once in their life. The prevalence rates of self-reported drunkenness during the 30 days preceding the survey are 8%, 22%, and 34%, respectively.

- Another measure of heavy drinking asks respondents to report how many occasions during the previous two-week period they had consumed ***five or more drinks in a row***. Prevalence rates for this behavior are 15%, 25%, and 31% for the three grades, respectively.[20]

- Nearly two-thirds (65%) of seniors reported having tried ***cigarettes*** at some time, and more than one-third (37%) smoked at least some in the past month. Even among eighth graders, nearly half (47%) reported having tried cigarettes and 19% smoked in the past month.

- ***Smokeless tobacco*** is used by a surprisingly large number of young people. Among eighth, tenth, and twelfth graders, lifetime prevalence rates are 17%, 26%, and 25%, respectively, while current (past 30 days)

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[19] In 1993 the text of the alcohol prevalence questions was changed slightly in half of the forms for all grades so that the respondent was told explicitly to *exclude* those occasions when the respondent had "just a few sips" of an alcoholic beverage. In 1995 this change was made to the remaining forms. The 1997 data presented here are all based on the revised question. In later tables and graphs in this volume, the 1993 data are presented for both the original question and the revised question. As would be expected, the prevalence rates dropped slightly as a result of this methodological change, with the largest shifts observed in the lifetime prevalence measures and among the eighth-grade respondents. See Table 2-1a to examine the effects of this change.

[20] We have observed that the prevalence of heavy drinking (five or more drinks in a row at least once in the past two weeks) seems inconsistent with eighth-grade students' reported prevalence of getting drunk. In 1997, 15% of eighth graders said they had had five or more drinks in a row at least once in the past two weeks. However, only 8% said they had been drunk or very high from drinking in the past 30 days. It seems unlikely that about one-half of eighth graders who reported having five or more drinks in a row would not have become intoxicated from such an amount. We suspect that they may be over-reporting their occasions of heavy drinking, perhaps forgetting what "a drink" means, even though the questionnaire explicitly tells them that a drink means a bottle of beer, a glass of wine, a wine cooler, a shot of liquor, or a mixed drink. We believe that the reports of getting "drunk or very high" are likely to be the more accurate.

TABLE 4-3

Prevalence of Use of Heroin *with* and *without* a Needle Eighth, Tenth, and Twelfth Graders, 1997

(Entries are percentages of all respondents)

	Percent who used in:		
	Lifetime	Past year	Past month
Eighth Graders			
Used heroin only without a needle	0.8	0.5	0.2
Used heroin only with a needle	0.7	0.4	0.2
Used heroin both ways	0.6	0.3	0.2
Used heroin at all	2.1	1.3	0.6
Approx. weighted N =	18,600	18,600	18,600
Tenth Graders			
Used heroin only without a needle	1.0	0.7	0.3
Used heroin only with a needle	0.4	0.3	0.1
Used heroin both ways	0.6	0.4	0.2
Used heroin at all	2.1	1.4	0.6
Approx. weighted N =	15,500	15,500	15,500
Twelfth Graders			
Used heroin only without a needle	1.3	0.7	0.3
Used heroin only with a needle	0.3	0.2	0.1
Used heroin both ways	0.5	0.3	0.2
Used heroin at all	2.1	1.2	0.5
Approx. weighted N =	7,700	7,700	7,700

NOTE: Twelfth grade data based on three of six forms.
SOURCE: The Monitoring the Future Study, the University of Michigan.

prevalence rates are 6%, 9%, and 10%, respectively. As will be discussed later in this chapter, the rates are considerably higher among boys, who account for most smokeless tobacco use.

- Questions about ***anabolic steroids***, were added to the study in recent years. These drugs bear some resemblance to a number of other drugs in the study in that their distribution and sale are legally controlled and, like those other drugs, they often find their way into an illicit market. They also carry a particular danger for HIV transmission since they are often taken by injection. However, they differ from all the other drugs discussed here in one important way; they are not usually taken for their direct psychoactive effects, although they may have some, but rather for their enhancement of the user's musculature. Clearly their potential unintended consequences, including the transmission of HIV, make their illicit use a public health concern. It is for these reasons that they were added to the study.

  The prevalence rates for anabolic steroids are relatively low. For eighth, tenth, and twelfth graders, lifetime prevalence rates are 1.8%, 2.0%, and 2.4%, respectively, while current (past 30 days) prevalence rates are 0.5%, 0.7%, and 1.0%, respectively. (Rates for males are distinctly higher.)

Frequency of Lifetime, Annual, and 30-Day Use

While most of the discussion in this volume focuses on prevalence rates for different time periods (i.e., lifetime, annual, and 30-day), some readers may be interested in more detailed information about the frequency with which various drugs have been used in these same time periods. Tables 4-4a and 4-4b present frequency-of-use information in the full detail contained in the original question and answer sets.

Prevalence of Current Daily Use

Frequent use of illicit or licit drugs is a great concern for the health and safety of adolescents. Tables 4-8 and 5-4 (Chapter 5) and Figure 4-2 show the prevalence of current daily or near-daily use of the various classes of drugs. For all drugs, except cigarettes and smokeless tobacco, respondents are considered current daily users if they indicated that they had used the drug on twenty or more occasions in the preceding 30 days. In the case of cigarettes, respondents explicitly stated the use of one or more cigarettes per day, and for smokeless tobacco they stated using "about once a day" or more often.

- Across all three grade levels, there are more current daily users of ***cigarettes*** than of any of the other drug classes: 9%, 18%, and 25% in grades 8, 10, and 12, respectively. Many of these daily smokers say they currently smoke a half-pack or more per day (4%, 9%, and 14% of all respondents in each grade 8, 10, and 12, respectively).

- Daily use of ***smokeless tobacco*** is considerably lower than daily use of cigarettes, at 1.0%, 2.2%, and 4.4%, respectively.

- The proportions of students who consume ***tobacco*** daily in either (or both) forms are slightly higher than the prevalence rates for cigarettes alone and close to the sum of the prevalence rates for the two different types of tobacco consumption: 10%, 19%, and 27% for grades 8, 10, and 12, respectively.

- For many years ***alcohol*** was the next most frequently used drug on a daily basis at all three grade levels, but because daily marijuana use rose substantially in the 1990s, it now exceeds daily alcohol use. The daily alcohol rates in 1997 are at 0.8%, 1.7%, and 3.9% in grades 8, 10, and 12, respectively,

- ***Marijuana*** is now used on a daily or near-daily basis by more than one of every 20 seniors (5.8%); somewhat fewer tenth-grade and eighth-grade students use it daily (3.7% and 1.1%, respectively). (See Chapter 10 for a discussion of levels of past daily use and cumulative daily use of marijuana.)

- Less than 1% of the twelfth-grade respondents reported daily use of any one of the illicit drugs other than marijuana. They reported 0.1% daily use of ***amyl*** and ***butyl nitrites*** and 0.3% daily use of ***stimulants*** and ***steroids***, followed by a number of drug classes at 0.2% or below (see Table 5-4). While very low, these figures are not inconsequential, because 1% of the high school class of 1997 represents more than 25,000 individuals nationwide.

NONCONTINUATION RATES

One indication of the proportion of people who try a drug but do not continue to use it can be derived from calculating the percentage of those who ever used a drug (once or more) but who did not use it in the 12 months preceding the survey.[21] We use the word "noncontinuation" to describe this operational definition, rather than "discontinuation," because the latter might imply discontinuing an established pattern of use, whereas our current operational definition includes experimental users as well as established users. In Figure 4-3 these noncontinuation rates are provided for all drug classes for all grades in 1997. It may be seen in Figure 4-3 that noncontinuation rates vary widely among the different drugs.

- The highest noncontinuation rates observed are for ***inhalants*** (57%), ***crystal methamphetamine*** (ice) (48%), ***heroin*** (43%), ***steroids*** (42%), ***PCP*** and ***methaqualone*** (both 41%), ***nitrites*** and ***tranquilizers*** (both 40%), ***other cocaine*** and ***crack*** (both 39%), ***LSD*** and ***stimulants*** (both 38%), ***cocaine*** and ***barbiturates*** (both 37%), ***other opiates*** (36%), and

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[21] This operationalization of noncontinuation has an inherent problem in that users of a given drug who initiated use during the past year by definition cannot be noncontinuers. Thus, the definition tends to understate the noncontinuation rate, particularly for drugs that tend to be initiated late in high school rather than in earlier years.

TABLE 4-4a

Frequency of Use of Various Drugs: Lifetime, Annual, and Thirty-Day Eighth, Tenth, and Twelfth Graders, 1997

(Entries are percentages)

	Marijuana			Inhalants[a,b]			Amyl/Butyl[c] Nitrites			Hallucinogens[a]			LSD			PCP[c]			MDMA[c]		
Grade	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th
Approx. N =	18600	15500	15400	18600	15500	12800	—	—	2600	18600	15500	15400	18600	15500	15400	—	—	2600	9300	7800	2600
Lifetime Frequency																					
No occasions	77.4	57.7	50.4	79.0	81.7	83.9	—	—	98.0	94.6	89.5	84.9	95.3	90.6	86.4	—	—	96.1	96.8	94.3	93.1
1-2 occasions	8.3	10.2	9.8	12.4	10.7	7.9	—	—	0.6	2.7	4.5	5.3	2.9	4.9	5.6	—	—	2.2	2.0	3.6	4.0
3-5 occasions	3.6	5.9	6.4	3.8	3.3	3.2	—	—	0.4	1.3	2.5	3.6	0.7	1.7	2.6	—	—	0.4	0.7	0.9	1.7
6-9 occasions	2.2	4.3	4.8	2.0	1.8	1.7	—	—	0.1	0.4	1.1	1.6	0.4	1.1	1.7	—	—	0.3	0.3	0.3	0.4
10-19 occasions	2.7	5.1	5.7	1.4	1.3	1.6	—	—	0.3	0.5	1.2	2.1	0.3	0.9	1.7	—	—	0.4	0.1	0.4	0.2
20-39 occasions	2.0	4.9	5.6	0.6	0.5	0.8	—	—	0.2	0.2	0.5	1.0	0.1	0.5	0.9	—	—	0.2	0.2	0.3	0.2
40 or more	3.8	11.9	17.5	0.8	0.8	1.0	—	—	0.4	0.4	0.7	1.6	0.2	0.4	1.2	—	—	0.4	0.1	0.3	0.5
Annual Frequency																					
No occasions	82.3	65.2	61.5	88.2	91.4	93.3	—	—	98.8	96.3	92.4	90.2	96.8	93.3	91.6	—	—	97.7	97.7	96.1	96.0
1-2 occasions	7.2	10.0	10.2	7.3	5.3	3.4	—	—	0.3	1.8	3.6	4.5	2.1	3.8	4.6	—	—	1.7	1.5	2.4	2.4
3-5 occasions	3.0	5.9	6.0	2.3	1.6	1.4	—	—	0.1	1.1	1.9	2.7	0.5	1.3	1.8	—	—	0.1	0.5	0.6	0.8
6-9 occasions	2.2	4.4	4.2	1.1	0.8	0.9	—	—	0.4	0.3	0.8	1.1	0.3	0.8	0.9	—	—	0.1	0.2	0.3	0.2
10-19 occasions	2.1	4.5	4.8	0.7	0.5	0.6	—	—	0.3	0.3	0.8	0.9	0.1	0.5	0.6	—	—	0.1	0.2	0.2	0.2
20-39 occasions	1.4	3.7	3.8	0.4	0.3	0.3	—	—	0.1	0.1	0.2	0.3	0.1	0.2	0.3	—	—	0.2	*	0.2	0.3
40 or more	1.8	6.4	9.7	0.2	0.2	0.2	—	—	0.1	0.2	0.3	0.4	0.1	0.2	0.2	—	—	0.1	*	0.1	0.1
30-Day Frequency																					
No occasions	89.8	79.5	76.4	94.4	97.0	97.5	—	—	99.3	98.2	96.7	96.1	98.5	97.2	97.0	—	—	99.3	99.0	98.7	98.4
1-2 occasions	4.7	7.8	7.8	3.9	2.0	1.6	—	—	0.1	1.1	2.0	2.4	1.1	2.0	2.0	—	—	0.4	0.7	0.8	0.9
3-5 occasions	2.0	3.8	3.9	1.0	0.5	0.6	—	—	0.2	0.4	0.8	0.9	0.2	0.5	0.5	—	—	0.1	0.1	0.3	0.2
6-9 occasions	1.4	2.6	3.0	0.4	0.2	0.2	—	—	0.2	0.1	0.2	0.3	0.1	0.2	0.2	—	—	*	0.1	0.2	0.2
10-19 occasions	1.1	2.6	3.2	0.2	0.2	0.1	—	—	0.1	0.1	0.2	0.2	0.1	0.1	0.1	—	—	0.1	*	0.1	0.2
20-39 occasions	0.5	1.9	2.6	0.1	*	0.1	—	—	0.0	*	*	0.1	*	*	0.1	—	—	0.0	*	*	0.1
40 or more	0.5	1.8	3.2	0.1	0.1	0.1	—	—	0.1	*	0.1	0.2	*	0.1	0.1	—	—	0.1	*	0.0	*

SOURCE: The Monitoring the Future Study, the University of Michigan

(Table continued on next page)

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TABLE 4-4a (cont.)

Frequency of Use of Various Drugs: Lifetime, Annual, and Thirty-Day Eighth, Tenth, and Twelfth Graders, 1997

(Entries are percentages)

	Cocaine			Crack			Other Cocaine[d]			Heroin[e]			Other Opiates			Stimulants[f,g]		
Grade	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th
Approx N =	18600	15500	15400	18600	15500	15400	18600	15500	10300	18600	15500	15400	--	--	15400	18600	15500	15400
Lifetime Frequency																		
No occasions	95.6	92.9	91.3	97.3	96.4	96.1	96.5	93.9	91.8	97.9	97.9	97.9	—	—	90.3	87.7	83.0	83.5
1-2 occasions	2.0	3.1	3.6	1.8	2.0	2.0	2.4	3.3	3.9	1.1	1.0	1.1	—	—	4.5	6.7	7.7	6.6
3-5 occasions	1.4	1.6	1.8	0.4	0.5	0.6	0.4	0.8	1.4	0.6	0.6	0.4	—	—	1.9	2.4	3.4	3.0
6-9 occasions	0.3	0.6	0.8	0.2	0.3	0.4	0.3	0.8	0.8	0.1	0.1	0.2	—	—	1.1	1.2	1.8	2.0
10-19 occasions	0.3	0.8	0.8	0.1	0.3	0.4	0.1	0.5	0.8	0.1	0.2	0.2	—	—	0.9	0.9	1.7	2.0
20-39 occasions	0.1	0.4	0.6	0.1	0.1	0.2	0.1	0.3	0.6	*	*	0.1	—	—	0.6	0.5	1.2	1.2
40 or more	0.3	0.6	1.0	0.1	0.3	0.4	0.1	0.4	0.7	0.2	0.2	0.3	—	—	0.7	0.5	1.3	1.8
Annual Frequency																		
No occasions	97.2	95.3	94.5	98.3	97.8	97.6	97.9	95.9	95.0	98.7	98.6	98.8	—	—	93.8	91.9	87.9	89.8
1-2 occasions	1.5	2.1	2.3	1.1	1.2	1.3	1.5	2.2	2.4	0.7	0.7	0.6	—	—	3.2	4.9	6.0	4.3
3-5 occasions	0.7	1.1	1.2	0.3	0.4	0.4	0.3	0.7	0.9	0.3	0.4	0.2	—	—	1.3	1.5	2.3	1.9
6-9 occasions	0.2	0.6	0.7	0.2	0.2	0.2	0.2	0.6	0.7	0.1	0.1	0.1	—	—	0.7	0.8	1.5	1.4
10-19 occasions	0.2	0.6	0.6	0.1	0.2	0.2	0.1	0.4	0.6	0.1	0.1	0.1	—	—	0.5	0.6	1.2	1.3
20-39 occasions	0.1	0.2	0.3	0.1	0.1	0.1	0.1	0.1	0.3	*	0.1	0.1	—	—	0.2	0.2	0.6	0.6
40 or more	0.1	0.2	0.4	*	0.1	0.2	0.1	0.1	0.2	0.1	0.1	0.1	—	—	0.3	0.2	0.5	0.7
30-Day Frequency																		
No occasions	98.9	98.1	97.7	99.3	99.1	99.1	99.2	98.4	98.0	99.4	99.4	99.5	—	—	97.7	96.2	94.9	95.2
1-2 occasions	0.5	1.0	1.2	0.5	0.6	0.5	0.6	1.0	1.3	0.3	0.3	0.2	—	—	1.3	2.4	2.8	2.5
3-5 occasions	0.4	0.6	0.5	0.1	0.1	0.2	0.1	0.3	0.4	0.2	0.2	0.1	—	—	0.5	0.8	1.1	0.9
6-9 occasions	0.1	0.1	0.2	0.1	0.1	0.1	0.1	0.1	0.2	*	0.1	*	—	—	0.2	0.3	0.5	0.6
10-19 occasions	0.1	0.2	0.2	*	0.1	0.1	*	0.1	0.1	0.1	0.1	0.1	—	—	0.2	0.2	0.4	0.5
20-39 occasions	*	0.1	0.1	0.0	*	*	*	*	0.1	*	*	*	—	—	0.1	0.1	0.1	0.2
40 or more	*	*	0.1	*	*	0.1	*	*	*	*	*	0.1	—	—	0.1	*	0.2	0.1

SOURCE: The Monitoring the Future Study, the University of Michigan.

(Table continued on next page)

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TABLE 4-4a (cont.)

Frequency of Use of Various Drugs: Lifetime, Annual, and Thirty-Day Eighth, Tenth, and Twelfth Graders, 1997

(Entries are percentages)

	Crystal Meth (Ice)[h]			Barbiturates[g]			Tranquilizers[g]			Alcohol			Been Drunk[h]			Steroids[h]		
Grade:	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th
Approx. N =	—	—	5100	—	—	15400	18600	15500	15400	18600	15500	15400	18600	15500	5100	18600	15600	5100
Lifetime Frequency																		
No occasions	—	—	95.6	—	—	91.9	95.2	92.8	92.2	46.2	28.0	18.3	74.8	50.6	35.8	98.2	98.0	97.6
1-2 occasions	—	—	2.3	—	—	3.8	3.0	3.7	4.0	13.2	10.5	7.9	12.9	17.3	14.5	1.1	1.0	1.1
3-5 occasions	—	—	0.7	—	—	1.4	0.8	1.5	1.3	11.7	12.9	10.6	5.1	9.7	9.9	0.4	0.3	0.3
6-9 occasions	—	—	0.2	—	—	1.0	0.3	0.7	0.9	9.0	11.4	9.4	2.5	6.7	7.5	0.1	0.2	0.2
10-19 occasions	—	—	0.5	—	—	0.7	0.4	0.6	0.7	8.5	12.7	13.7	2.2	6.3	9.2	0.1	0.1	0.1
20-39 occasions	—	—	0.3	—	—	0.5	0.1	0.4	0.5	5.3	9.5	12.2	1.3	4.4	8.5	*	0.1	0.2
40 or more	—	—	0.5	—	—	0.7	0.2	0.4	0.5	6.2	14.9	28.0	1.2	5.1	14.7	0.1	0.3	0.5
Annual Frequency																		
No occasions	—	—	97.7	—	—	94.9	97.1	95.1	95.3	54.5	34.8	25.2	81.6	59.3	46.8	99.0	98.8	98.6
1-2 occasions	—	—	1.3	—	—	2.6	1.9	2.7	2.7	19.3	19.2	16.2	11.2	17.9	15.6	0.7	0.6	0.6
3-5 occasions	—	—	0.3	—	—	1.0	0.5	1.0	0.7	11.0	14.2	13.0	3.3	8.5	10.3	0.1	0.1	0.2
6-9 occasions	—	—	0.2	—	—	0.6	0.2	0.5	0.6	6.6	10.6	11.7	1.7	5.5	7.8	0.1	0.1	0.1
10-19 occasions	—	—	0.2	—	—	0.5	0.1	0.4	0.4	4.8	10.4	13.2	1.3	4.6	7.6	*	0.1	0.1
20-39 occasions	—	—	0.1	—	—	0.3	0.1	0.2	0.3	2.1	5.7	8.8	0.5	2.3	5.4	*	0.1	0.1
40 or more	—	—	0.1	—	—	0.2	0.1	0.2	0.1	1.6	5.1	11.9	0.4	2.1	6.6	0.1	0.2	0.3
30-Day Frequency																		
No occasions	—	—	99.2	—	—	97.9	98.8	97.9	98.2	75.5	59.9	47.3	91.8	77.6	65.8	99.5	99.3	99.0
1-2 occasions	—	—	0.3	—	—	1.2	0.8	1.4	1.1	14.8	19.9	21.1	5.5	13.7	15.8	0.3	0.2	0.4
3-5 occasions	—	—	0.1	—	—	0.5	0.2	0.4	0.4	5.2	10.0	13.5	1.4	4.5	7.7	0.1	0.1	0.1
6-9 occasions	—	—	0.1	—	—	0.2	0.1	0.2	0.2	2.5	5.4	8.3	0.8	2.3	5.2	*	0.1	0.2
10-19 occasions	—	—	0.1	—	—	0.2	0.1	0.1	0.1	1.3	3.1	5.9	0.4	1.3	3.6	*	0.1	0.1
20-39 occasions	—	—	*	—	—	0.1	*	*	0.1	0.5	0.8	1.9	0.1	0.3	1.1	*	0.1	0.1
40 or more	—	—	0.1	—	—	*	*	0.0	*	0.3	0.9	2.0	0.1	0.3	0.9	*	0.1	0.3

NOTES: '—' indicates data not available. '*' indicates less than .05 percent.
SOURCE: The Monitoring the Future Study, the University of Michigan.

[a] Unadjusted for known underreporting of certain drugs. See text for details.
[b] 12th grade only: Data based on five of six forms.
[c] 8th and 10th grade only: Data based on two of four forms. 12th grade only: Data based on one of six forms.
[d] 12th grade only: Data based on four of six forms.
[e] In 1995, the heroin question was changed in three of six forms for 12th graders and in one of two forms for 8th and 10th graders. Separate questions were asked for use with injection and without injection. Data presented here represent the combined data from all forms. In 1996, the heroin question was changed in the remaining 8th and 10th grade form.
[f] Based on the data from the revised question, which attempts to exclude the inappropriate reporting of nonprescription stimulants.
[g] Only drug use which was not under a doctor's orders is included here.
[h] 12th grade only: Data based on two of six forms.

TABLE 4-4b

Frequency of Occasions of Heavy Drinking, and Cigarette and Smokeless Tobacco Use Eighth, Tenth, and Twelfth Graders, 1997

(Entries are percentages)

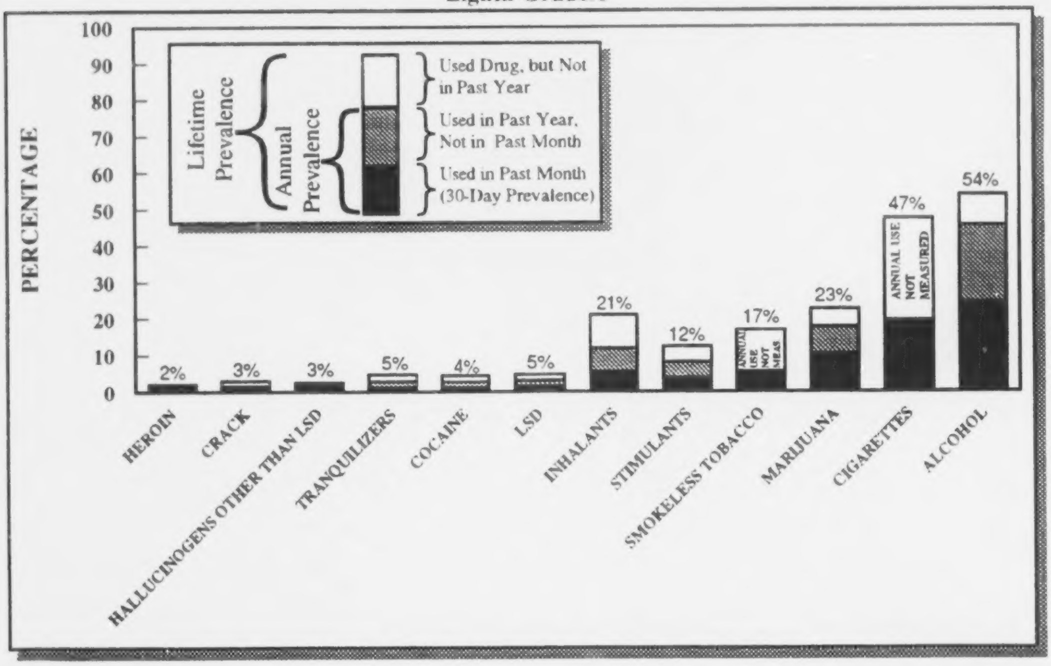
	Percent who used		
	8th Grade	10th Grade	12th Grade
Q. *Think back over the LAST TWO WEEKS. How many times have you had five or more drinks in a row?*			
None	85.5	74.9	68.7
Once	6.3	9.8	9.7
Twice	4.0	6.4	7.8
3 to 5 times	2.8	5.6	8.9
6 to 9 times	0.8	1.6	3.0
10 or more times	0.7	1.7	2.0
Approx. N =	18600	15500	15400
Q. *Have you ever smoked cigarettes?*			
Never	52.7	39.8	34.6
Once or twice	23.5	22.9	22.1
Occasionally but not regularly	11.7	15.0	16.0
Regularly in the past	5.9	8.3	7.2
Regularly now	6.2	14.0	20.2
Approx. N =	18600	15500	15400
Q. *How frequently have you smoked cigarettes during the past 30 days?*			
Not at all (includes "never" category from question above)	80.6	70.2	63.5
Less than one cigarette per day	10.4	11.8	12.0
One to five cigarettes per day	5.5	9.4	10.3
About one-half pack per day	1.9	4.7	7.3
About one pack per day	0.9	2.7	5.3
About one and one-half packs per day	0.4	0.9	1.3
Two packs or more per day	0.3	0.4	0.4
Approx. N =	18600	15500	15400
Q. *Have you ever taken or used smokeless tobacco (snuff, plug, dipping tobacco, chewing tobacco)?*			
Never	83.2	73.7	74.7
Once or twice	10.5	15.9	12.4
Occasionally but not regularly	3.9	5.9	5.2
Regularly in the past	1.3	2.3	3.4
Regularly now	1.1	2.3	4.3
Approx. N =	9300	7800	2600
Q. *How frequently have you taken smokeless tobacco during the past 30 days?*			
Not at all (includes "never" category from question above)	94.5	91.1	90.3
Once or twice	2.9	4.4	3.6
Once or twice per week	1.0	1.3	0.8
Three to five times per week	0.6	1.0	1.0
About once a day	0.3	0.4	0.9
More than once a day	0.7	1.8	3.5
Approx. N =	9300	7800	2600

SOURCE: The Monitoring the Future Study, the University of Michigan.

FIGURE 4-1

Prevalence and Recency of Use
Various Types of Drugs for Eighth, Tenth, and Twelfth Graders, 1997

Eighth Graders



Tenth Graders

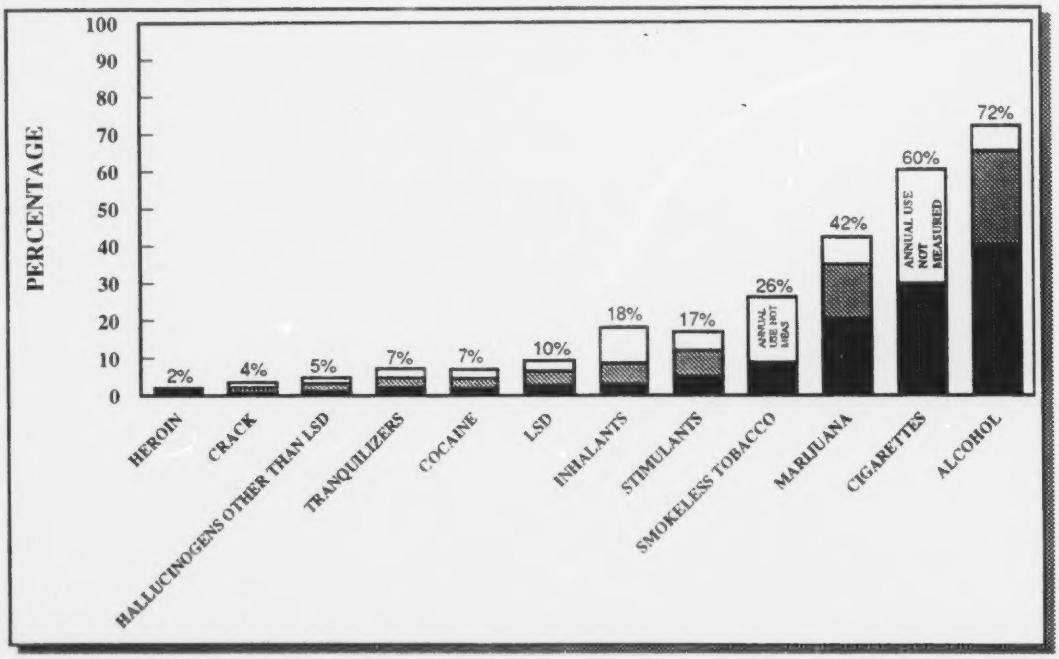


FIGURE 4-1 (cont.)

Prevalence and Recency of Use
Various Types of Drugs for Eighth, Tenth, and Twelfth Graders, 1997

Twelfth Graders

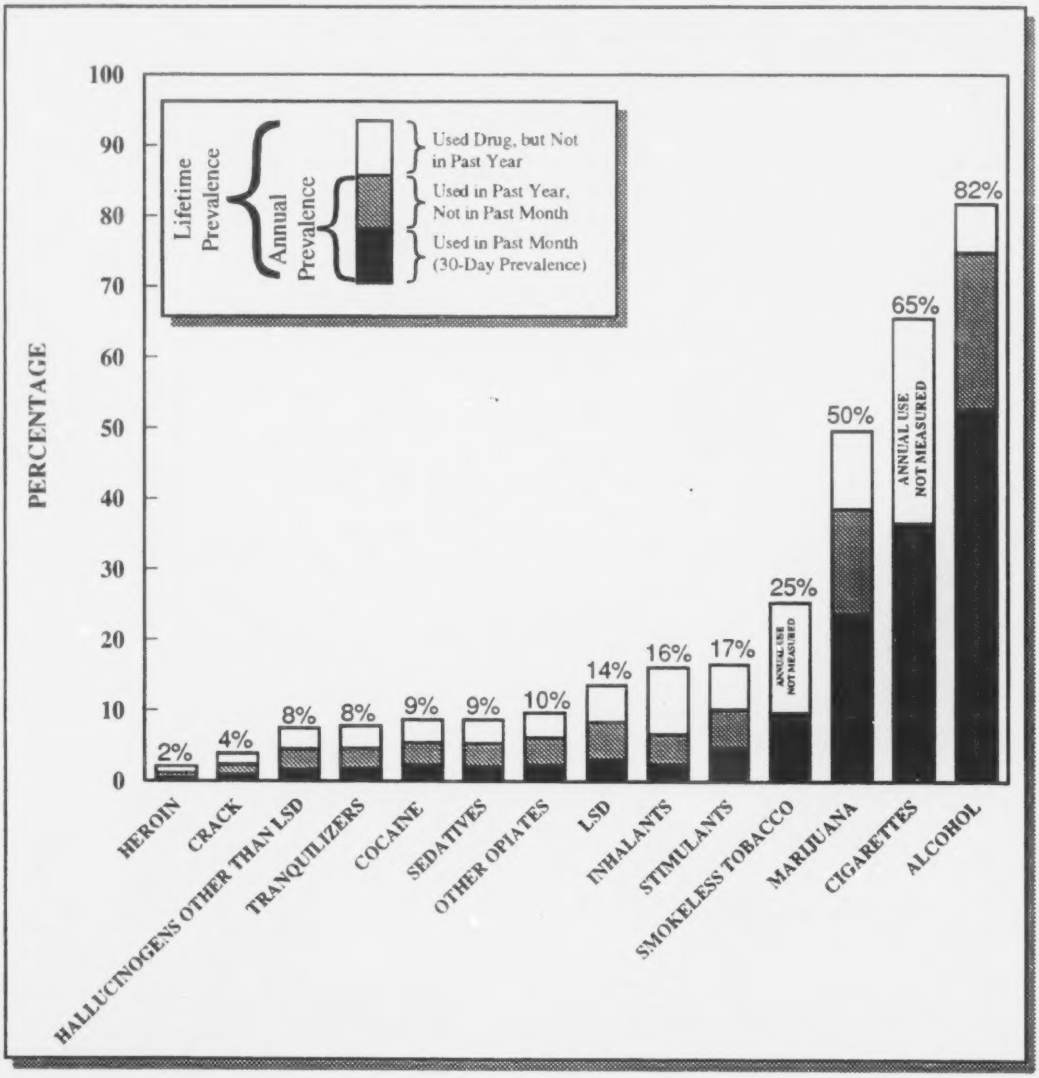
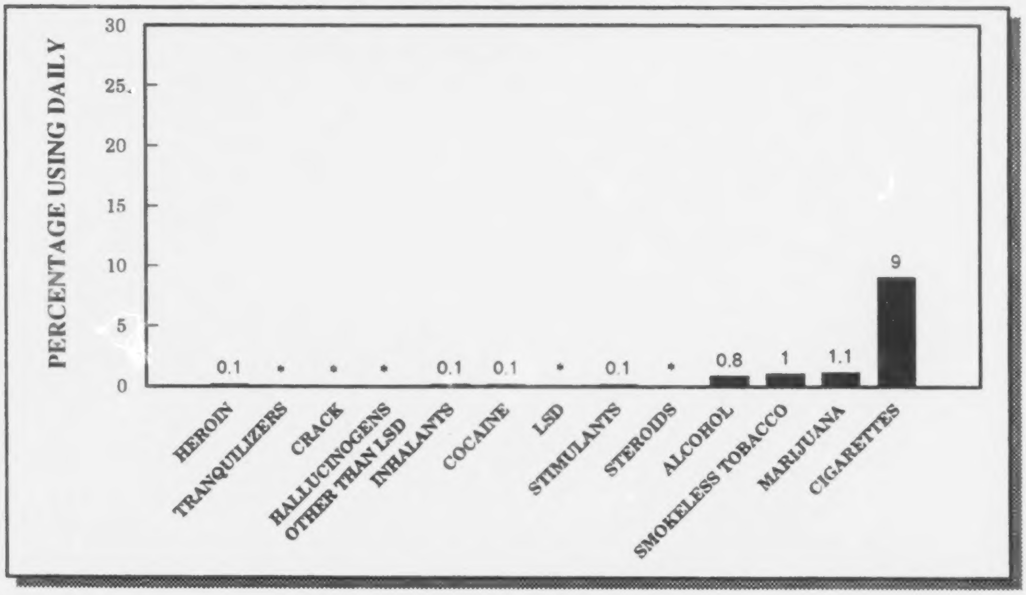


FIGURE 4-2

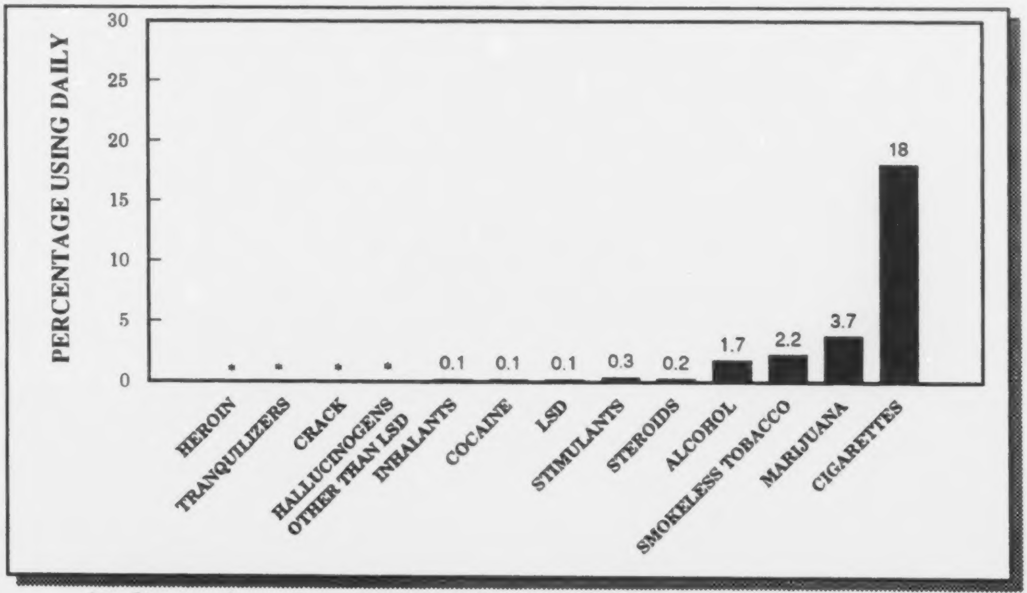
Thirty-Day Prevalence of Daily Use

Various Types of Drugs for Eighth, Tenth, and Twelfth Graders, 1997

Eighth Graders



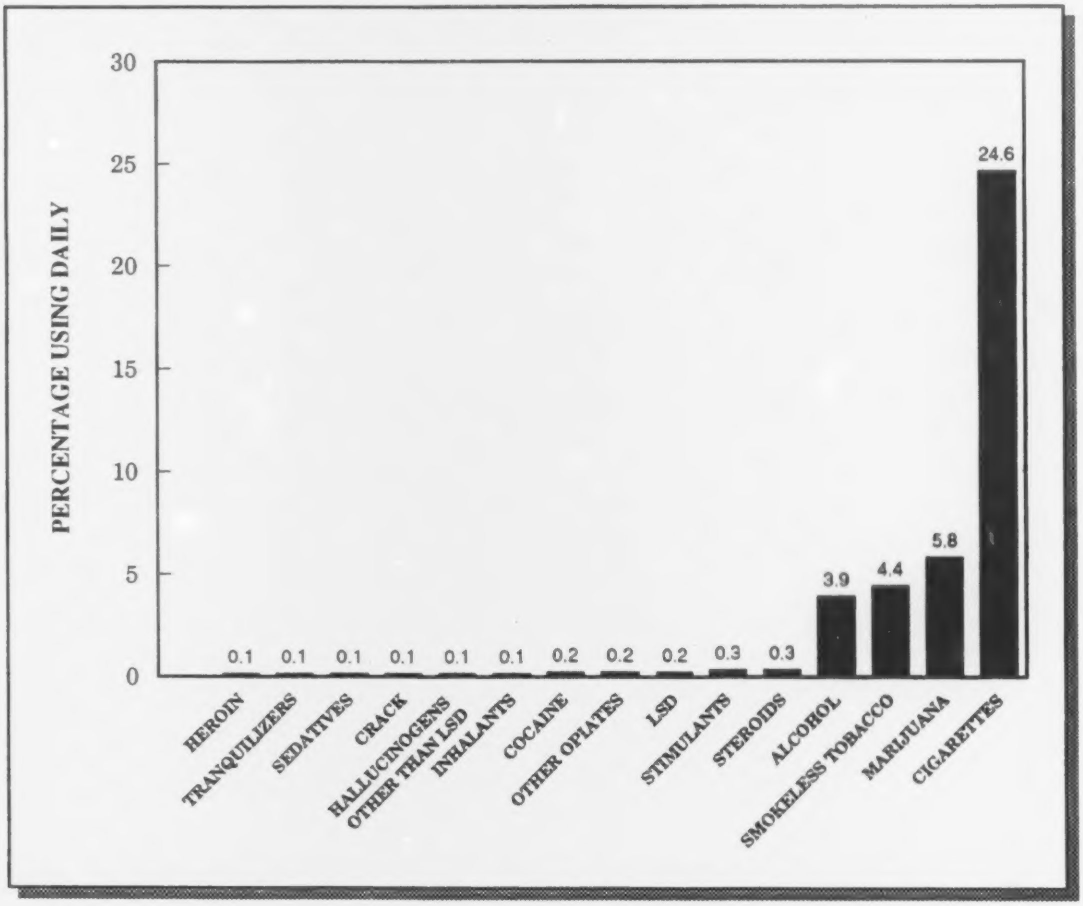
Tenth Graders



*indicates less than 0.05%

FIGURE 4-2(cont.)

Thirty-Day Prevalence of Daily Use
Various Types of Drugs for Eighth, Tenth, and Twelfth Graders, 1997



Twelfth Graders

hallucinogens (35%). Many inhalants are used primarily at a younger age, so often use is not continued into the senior year. Use of methaqualone may have declined in part because it is no longer readily available.

- Because a relatively high proportion of users continue to use ***marijuana*** at some level over an extended period, it consistently has had one of the lowest noncontinuation rates in senior year of any of the illicit drugs (22% in 1997).

- It is noteworthy that of the seniors who have ever used ***crack*** (3.9%), only about one-quarter (0.9%) are current users and only 0.1% of the total sample are current daily users. While there is no question that crack is highly addictive, the evidence here suggests that it is not usually addictive on the first use.

- In contrast to illicit drugs, noncontinuation rates for the two licit drugs are extremely low. ***Alcohol***, tried by the great majority of seniors (82%), is still used in the senior year by nearly all of those who have ever tried it (75% of all seniors), yielding a noncontinuation rate for alcohol of only 8.4%.[22]

- Noncontinuation is defined differently for ***cigarettes***, because cigarette use in the past year is not asked of respondents. The noncontinuation rate is the percentage of those who say they ever smoked "regularly," who also reported not smoking at all during the past 30 days. Of the seniors who said they were regular smokers, only 13% have ceased active use.

- Noncontinuation is defined for ***smokeless tobacco*** much the same way as for cigarettes: it also has a relatively low rate of noncontinuation by senior year, with only 26% of the lifetime "regular" users not using in the past 30 days.

PREVALENCE COMPARISONS FOR IMPORTANT SUBGROUPS

Gender Differences

In general, higher proportions of males than females are involved in illicit drug use, especially heavy drug use; however, this picture is a somewhat complicated one (see Tables 4-5 through 4-8).

- Overall, the proportion of twelfth graders using ***marijuana*** is higher among males (annual prevalence 41% vs. 36% among females), and daily use of marijuana is even more concentrated among males (8.1% vs. 3.1% for females). This is also true among eighth- and tenth-grade students (see Tables 4-6 and 4-8).

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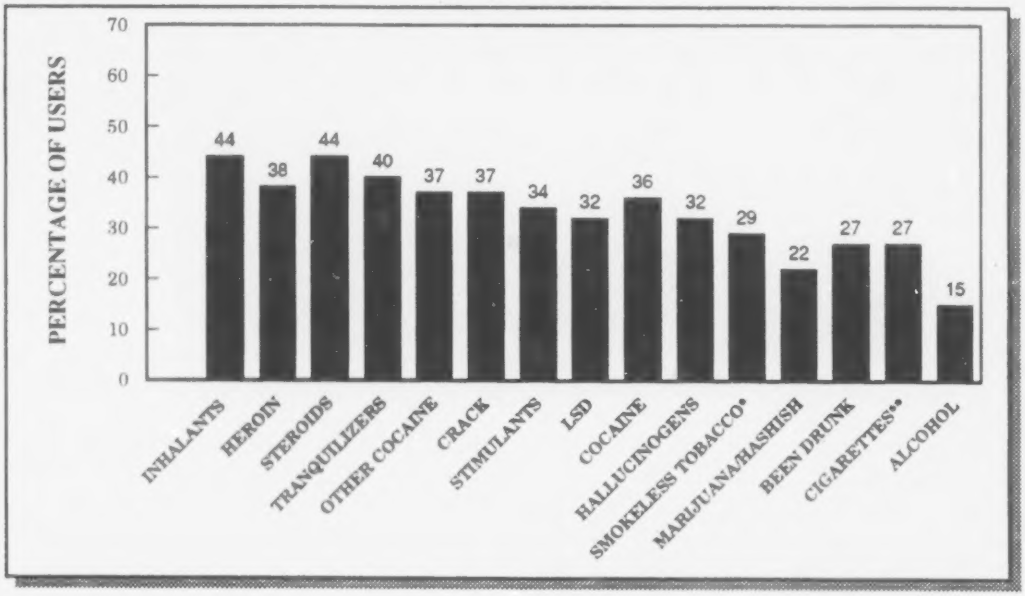
[22] Specifically, dividing the 74.8% annual rate by the 81.7% lifetime rates yields a *continuation* rate of 91.6%; the *noncontinuation* rate is thus 8.4%.

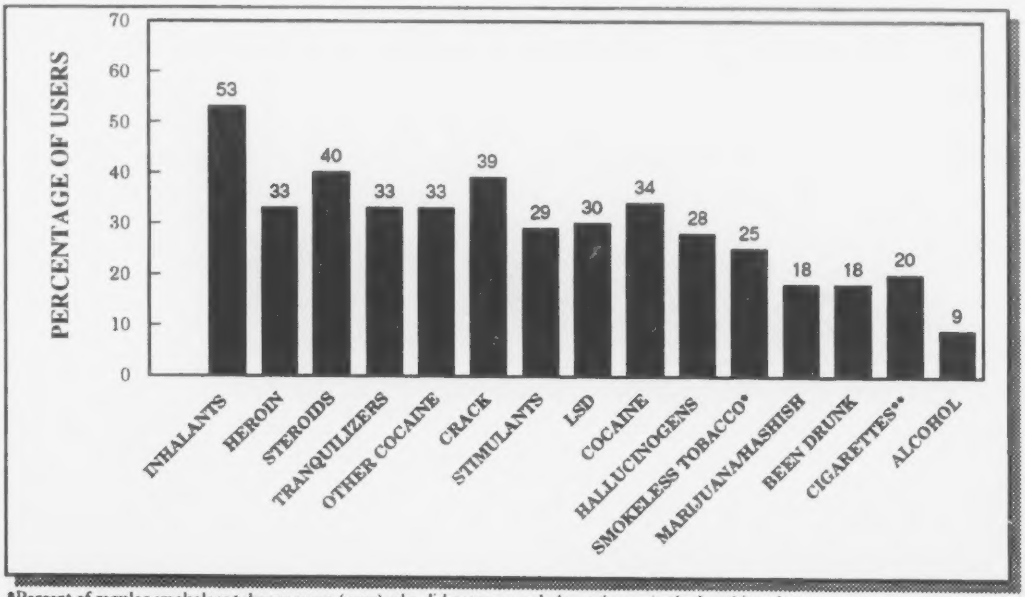
FIGURE 4-3

Noncontinuation Rates: Percent Who Used Drug Once or More in Lifetime Who Did Not Use in Past Year for Eighth, Tenth, and Twelfth Graders, 1997

Eighth Graders



Tenth Graders

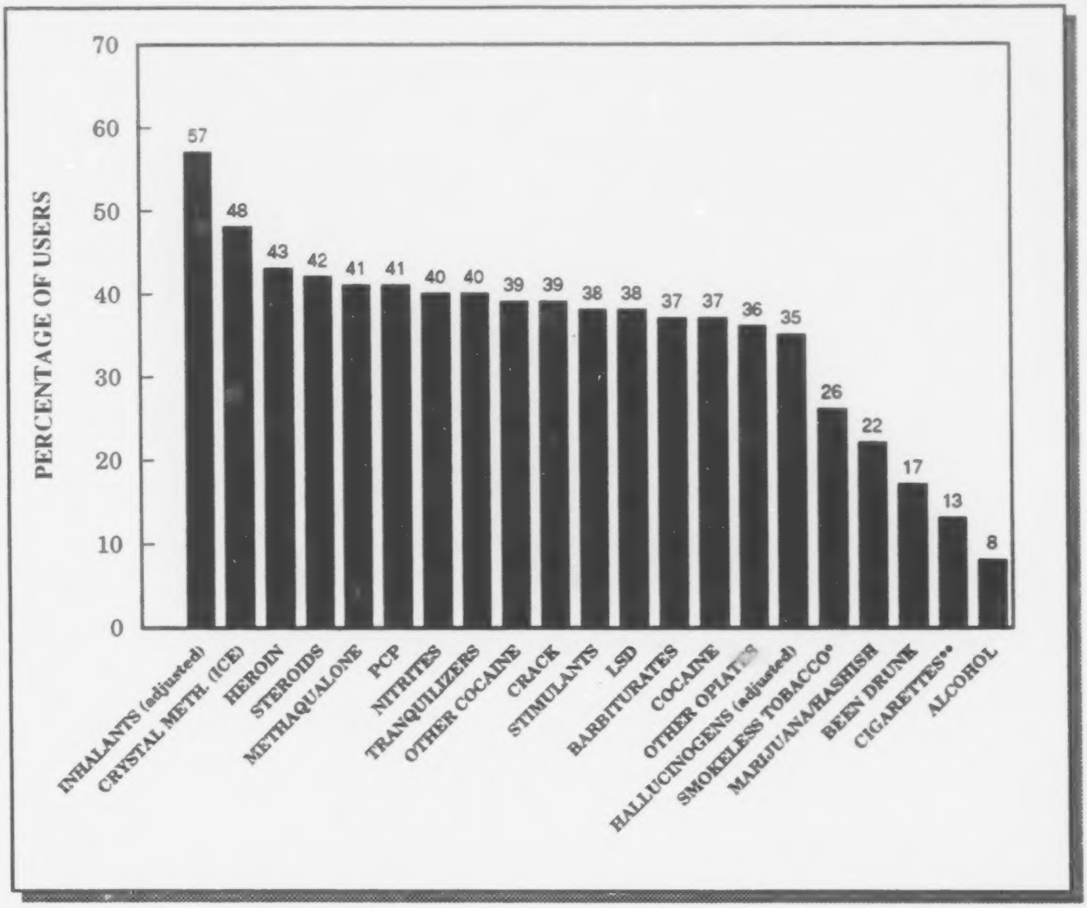


*Percent of regular smokeless tobacco users (ever) who did not use smokeless tobacco in the last thirty days.

**Percent of regular smokers (ever) who did not smoke at all in the last thirty days.

FIGURE 4-3 (cont.)

Noncontinuation Rates: Percent Who Used Drug Once or More in Lifetime Who Did Not Use in Past Year for Eighth, Tenth, and Twelfth Graders, 1997



*Percent of regular smokeless tobacco users (ever) who did not use smokeless tobacco in the last thirty days.
**Percent of regular smokers (ever) who did not smoke at all in the last thirty days.

- Males have considerably higher prevalence rates on most other illicit drugs, too. The annual prevalence rates in senior year tend to be at least one and one-half to two times as high among males as among females for ***heroin, cocaine, crack, inhalants, hallucinogens***, and ***LSD***. Further, males account for an even greater share of the frequent or heavy users of these various classes of drugs. For many of these drugs, there is little gender difference between eighth and tenth graders. In fact, for some drugs females have slightly higher rates of annual use in eighth grade, including ***inhalants, stimulants***, and ***tranquilizers***. Thus, the gender differences in twelfth grade, with males more likely to use, seem to emerge over the course of middle to late adolescence.

- In twelfth grade, females have annual prevalence rates for ***stimulants*** that are close to those for males, and in the earlier grades females actually have higher rates of stimulant use.

- The number of high school seniors of both genders who reported using ***some illicit drug other than marijuana*** during the last year are not substantially different (22% for males vs. 19% for females; see Figure 5-7 in Chapter 5). If going beyond marijuana is an important threshold point in the sequence of illicit drug use, then fairly similar proportions of both sexes were willing to cross that threshold at least once during the year. However, on average female users take fewer types of drugs and tend to use them with less frequency than their male counterparts.

- The use of ***anabolic steroids*** is heavily concentrated in the male population, with use among senior males at 2.5% in the past year compared to 0.5% among females. In eighth grade the difference is 1.3% vs. 0.7%, respectively.

- Frequent use of ***alcohol*** tends to be disproportionately concentrated among males. ***Daily use***, for example, is reported by 5.7% of the senior males vs. only 1.9% of the senior females. Also, males are more likely than females to drink large quantities of alcohol in a single sitting; 38% of senior males reported drinking ***five or more drinks in a row*** in the prior two weeks vs. 24% of senior females.[23] These gender differences are observable at all three grade levels, but they are considerably larger among the older students.

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[23] Because females tend to weigh less than males, and may metabolize alcohol somewhat differently, the same amount of ingested alcohol would, on average, lead to higher blood alcohol concentrations for females, compared to males. Therefore, the difference in terms of a fixed number of drinks, such as five or more drinks, may not reflect the difference in intoxication rates. The difference in self-reported 30-day prevalence of drunkenness among seniors is 10% (39% for males and 29% for females), which is about two-thirds the 14% difference in having five or more drinks in a row (38% vs. 24%).

TABLE 4-5

Lifetime Prevalence of Use of Various Drugs by Subgroups
Twelfth Graders, 1997

(Entries are percentages)

	Marijuana	Inhalants[a]	Amyl/Butyl Nitrites	Hallucinogens[a]	LSD	PCP	MDMA	Cocaine	Crack	Other Cocaine	Heroin[b]	Other Opiates[c]	Stimulants[c]	Crystal Meth. (Ice)	Sedatives[c]	Barbiturates[c]	Methaqualone[c]	Tranquilizers[c]	Alcohol	Been Drunk	Cigarettes	Smokeless	Steroids
Total	49.6	16.1	2.0	15.1	13.6	3.9	6.9	8.7	3.9	8.2	2.1	9.7	16.5	4.4	8.7	8.1	1.7	7.8	81.7	64.2	65.4	25.3	2.4
Sex:																							
Male	52.0	18.4	3.2	17.2	15.5	4.6	7.8	9.7	4.3	8.9	2.7	10.6	15.2	5.3	9.6	8.5	2.2	8.3	81.8	66.2	65.9	41.7	4.1
Female	46.6	13.9	1.1	12.7	11.4	3.3	6.2	7.4	3.4	7.0	1.5	8.9	17.7	3.6	7.8	7.7	0.9	7.2	81.5	61.7	64.4	10.0	0.9
College Plans:																							
None or under 4 yrs	56.5	18.8	3.3	17.7	16.6	4.2	7.1	12.2	6.7	11.2	3.1	11.9	22.1	6.7	10.6	10.3	2.7	10.0	84.9	67.4	74.0	35.3	4.3
Complete 4 yrs	47.2	15.3	1.5	13.9	12.3	3.9	6.8	7.3	2.9	6.8	1.8	9.1	14.9	3.7	8.0	7.4	1.1	6.9	80.6	62.4	62.4	21.8	1.8
Region:																							
Northeast	54.3	20.7	3.6	21.0	18.8	8.2	10.3	10.5	4.6	9.7	2.9	12.8	17.0	5.0	10.2	9.4	2.4	9.0	85.8	68.9	67.7	21.6	2.9
North Central	47.0	15.9	1.3	12.3	11.5	2.3	3.0	7.2	3.6	6.9	1.9	8.5	17.6	3.4	8.3	7.4	1.8	6.1	81.5	61.8	67.2	30.9	3.1
South	46.3	13.3	1.2	12.9	12.0	3.5	7.8	7.3	2.9	6.9	1.8	9.2	15.6	3.2	9.1	8.8	1.4	8.8	79.3	63.1	63.9	24.5	1.6
West	54.6	16.2	2.9	16.7	13.7	2.4	7.3	11.4	5.4	10.8	2.0	8.9	16.0	7.5	7.0	6.6	1.3	6.9	81.8	64.6	62.8	22.8	2.7
Population Density:																							
Large MSA	48.9	14.6	2.0	14.1	12.8	3.9	7.0	7.4	3.6	6.8	1.8	7.7	14.3	4.7	7.0	6.7	0.8	7.0	81.7	63.1	63.6	19.4	1.6
Other MSA	52.6	15.9	2.3	17.0	15.2	4.6	7.7	9.3	3.8	9.0	2.3	10.9	15.8	4.0	8.9	8.1	2.1	8.2	81.6	63.3	64.1	20.9	2.8
Non-MSA	44.5	18.1	1.4	12.5	11.3	2.4	5.4	8.8	4.3	8.1	2.0	9.5	20.3	4.8	10.3	9.8	1.8	7.9	81.9	67.1	69.8	40.5	2.7
Parental Education:[d]																							
1.0-2.0 (Low)	46.0	14.9	3.4	11.8	11.3	3.3	7.4	10.0	5.5	10.5	2.8	6.8	15.8	5.1	7.8	7.1	1.6	6.1	77.0	61.7	64.4	19.2	5.5
2.5-3.0	49.7	15.9	1.6	13.9	12.4	4.4	4.9	8.9	4.4	7.8	1.7	8.7	17.4	4.5	8.6	8.2	1.7	7.2	83.7	63.2	66.2	24.6	2.0
3.5-4.0	49.3	16.5	2.4	15.2	13.9	3.9	7.4	8.8	3.5	8.4	2.4	10.2	16.7	3.9	9.5	8.9	1.9	7.5	82.1	61.4	65.1	27.8	2.1
4.5-5.0	49.7	16.6	2.1	15.7	13.7	4.4	6.0	7.8	3.5	7.0	2.0	10.5	15.7	4.8	9.1	8.0	1.6	8.7	81.5	67.4	65.1	25.2	2.0
5.5-6.0 (High)	51.1	16.3	1.5	17.2	14.8	2.6	12.0	7.4	2.8	7.2	1.6	11.7	16.3	3.9	7.8	7.7	0.3	8.9	81.5	66.4	65.0	25.6	2.1

NOTES: '—' indicates data not available.
Prevalence of use of each drug was included in all six questionnaire forms with the following exceptions: inhalants was in five forms; other cocaine was in four forms; crystal methamphetamine (ice), steroids, and "been drunk" were in two forms; and nitrites, PCP, MDMA, methaqualone and smokeless tobacco were in one form. The N's in Table 4-6 should be adjusted accordingly (i.e., the approximate N for inhalants is five-sixths of the 12th grade N given in Table 4-6).
See Table 4-6 for sample sizes.

SOURCE: The Monitoring the Future Study, the University of Michigan.

[a] Unadjusted for known underreporting of certain drugs. See text for details.

[b] In 1995, the heroin question was changed in half of the questionnaire forms. Separate questions were asked for use with injection and without injection. Data presented here represent the combined data from all forms.

[c] Only drug use which was not under doctor's orders is included here.

[d] Parental education is an average score of mother's education and father's education reported on the following scale: (1) Completed grade school or less, (2) Some high school, (3) Completed high school, (4) Some college, (5) Completed college, (6) Graduate or professional school after college. Missing data was allowed on one of the two variables.

TABLE 4-6

Annual Prevalence of Use of Various Drugs by Subgroups Eighth, Tenth, and Twelfth Graders, 1997

(Entries are percentages)

	Approx. N			Marijuana			Inhalants[a,b]			Hallucinogens[b]			LSD			MDMA[c]		
Grade	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th
Total	*18,600*	*15,500*	*15,400*	17.7	34.8	38.5	11.8	8.7	6.7	3.7	7.6	9.8	3.2	6.7	8.4	2.3	3.9	4.0
Sex																		
Male	*8,600*	*7,400*	*7,100*	19.2	37.3	40.9	10.5	9.1	8.3	4.0	8.7	12.0	3.6	7.6	10.3	2.7	4.7	5.6
Female	*9,300*	*7,800*	*7,700*	16.1	32.3	35.5	12.9	8.2	5.2	3.2	6.4	7.4	2.8	5.8	6.2	2.0	3.1	2.5
College Plans:																		
None or under 4 yrs	*1,900*	*2,200*	*3,200*	34.5	51.5	44.6	18.1	14.4	8.0	10.1	13.6	11.3	9.3	12.8	10.3	6.1	7.5	3.8
Complete 4 yrs	*15,800*	*13,000*	*11,000*	15.5	32.0	36.4	11.2	7.7	6.5	2.9	6.5	9.0	2.5	5.7	7.4	2.0	3.3	3.9
Region:																		
Northeast	*3,400*	*3,300*	*3,300*	16.2	34.6	43.5	12.1	8.9	9.4	2.8	6.2	13.9	2.3	5.2	11.8	1.5	3.0	6.9
North Central	*4,100*	*3,900*	*4,100*	17.0	34.4	36.5	11.3	8.3	6.9	3.8	7.0	7.6	3.3	6.0	7.0	1.7	3.2	1.3
South	*7,200*	*5,500*	*5,300*	17.2	34.4	35.0	11.6	8.8	5.6	3.4	8.3	9.2	3.0	7.9	8.1	2.3	5.0	4.3
West	*3,900*	*2,800*	*2,700*	20.6	36.5	42.6	12.6	8.5	5.4	4.8	8.5	9.5	4.3	7.4	6.9	3.8	3.7	4.1
Population Density:																		
Large MSA	*5,000*	*4,300*	*4,100*	16.4	34.1	38.3	10.4	8.1	5.9	3.3	7.8	8.8	2.9	7.0	7.7	1.8	4.0	3.6
Other MSA	*9,000*	*7,300*	*7,500*	18.2	36.6	40.5	11.5	8.4	6.5	4.0	7.9	11.2	3.6	7.0	9.3	3.1	3.6	4.6
Non-MSA	*4,600*	*3,900*	*3,800*	18.0	32.5	34.9	13.9	9.8	8.1	3.5	6.7	8.3	2.8	6.0	7.3	1.5	4.2	3.4
Parental Education:[d]																		
1.0-2.0 (Low)	*1,500*	*1,300*	*1,300*	24.8	34.5	34.8	12.1	9.3	5.4	5.0	6.5	7.3	4.7	5.9	6.8	2.2	3.0	3.5
2.5-3.0	*4,000*	*3,700*	*3,600*	20.3	36.8	37.4	12.6	8.5	6.3	3.9	7.3	8.5	3.2	6.6	7.3	2.4	3.9	3.1
3.5-4.0	*4,300*	*4,100*	*4,100*	19.5	37.8	38.1	13.5	9.4	7.1	3.8	8.2	9.9	3.4	7.4	8.5	2.9	5.2	3.8
4.5-5.0	*4,500*	*3,700*	*3,500*	15.7	33.1	40.1	11.4	8.3	7.9	3.4	8.2	10.4	2.9	7.0	8.6	2.0	2.5	2.9
5.5-6.0 (High)	*2,600*	*1,900*	*2,100*	12.1	30.5	39.7	10.8	8.2	6.0	3.5	6.8	11.6	2.9	6.0	9.5	2.7	4.0	8.7

SOURCE: The Monitoring the Future Study, the University of Michigan

[a] 12th grade only: Data based on five of six forms; N is five-sixths of N indicated.

[b] Unadjusted for known underreporting of certain drugs. See text for details.

[c] 8th and 10th grade only: Data based on one-third of N indicated due to changes in the questionnaire forms. 12th grade only: Data based on one of six forms; N is one-sixth of N indicated.

[d] Parental education is an average score of mother's education and father's education reported on the following scale: (1) Completed grade school or less, (2) Some high school, (3) Completed high school, (4) Some college, (5) Completed college, (6) Graduate or professional school after college. Missing data was allowed on one of the two variables.

(Table continued on next page)

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TABLE 4-6 (cont.)

Annual Prevalence of Use of Various Drugs by Subgroups Eighth, Tenth, and Twelfth Graders, 1997

(Entries are percentages)

	Cocaine			Crack			Other Cocaine[a]			Heroin[b]			Other Opiates[c]			Stimulants[c]		
Grade:	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th
Total	2.8	4.7	5.5	1.7	2.2	2.4	2.2	4.1	5.0	1.3	1.4	1.2	—	—	6.2	8.1	12.1	10.2
Sex:																		
Male	3.1	4.7	6.6	1.8	2.3	3.0	2.5	4.1	5.7	1.4	1.6	1.5	—	—	7.1	6.6	10.3	10.1
Female	2.5	4.6	4.2	1.5	2.2	1.8	1.9	4.0	4.0	1.1	1.3	0.9	—	—	5.4	9.6	13.9	10.2
College Plans:																		
None or under 4 yrs.	7.5	10.4	8.1	4.7	4.9	4.3	6.0	9.0	7.0	3.4	2.9	1.8	—	—	8.2	14.1	19.3	14.1
Complete 4 yrs.	2.2	3.7	4.4	1.3	1.8	1.7	1.7	3.2	4.1	1.1	1.2	1.0	—	—	5.7	7.5	10.9	8.9
Region:																		
Northeast	2.4	3.0	6.6	1.6	1.5	2.6	1.6	2.5	5.9	1.1	1.3	1.7	—	—	7.8	6.5	10.7	11.1
North Central	2.6	4.0	4.7	1.6	2.1	2.2	2.0	3.4	4.1	1.4	1.5	0.9	—	—	6.1	9.3	11.0	10.8
South	2.6	5.4	4.8	1.4	2.0	1.8	2.1	4.8	4.6	1.2	1.5	1.1	—	—	6.1	8.1	14.2	9.8
West	3.7	6.4	6.8	2.3	3.8	3.4	2.9	5.3	6.2	1.4	1.3	1.2	—	—	4.7	8.3	11.1	9.1
Population Density:																		
Large MSA	2.4	4.5	4.7	1.5	2.3	2.2	1.7	3.9	4.2	1.0	1.6	1.1	—	—	4.6	6.4	9.9	8.9
Other MSA	2.9	4.3	5.6	1.8	1.7	2.3	2.2	3.8	5.2	1.3	1.3	1.3	—	—	7.2	8.1	11.5	9.5
Non-MSA	3.0	5.7	6.0	1.7	3.3	2.8	2.5	4.9	5.6	1.5	1.6	1.0	—	—	6.0	9.9	15.5	13.0
Parental Education:[d]																		
1.0-2.0 (Low)	4.7	6.3	6.5	3.0	3.4	3.6	3.5	5.5	6.4	2.3	1.3	2.1	—	—	4.7	9.6	12.2	9.8
2.5-3.0	3.0	5.0	5.5	2.0	2.4	2.5	2.4	4.3	4.9	1.4	1.3	1.0	—	—	5.3	9.2	14.1	10.3
3.5-4.0	2.8	5.4	5.6	1.4	2.6	2.0	2.1	4.6	4.9	1.0	1.6	1.2	—	—	6.5	8.9	13.5	10.8
4.5-5.0	2.6	3.7	5.2	1.5	1.8	2.5	1.9	3.3	4.4	1.1	1.5	1.1	—	—	6.8	7.5	10.6	9.4
5.5-6.0 (High)	2.3	3.3	4.4	1.5	1.2	1.8	1.7	2.9	4.8	1.5	1.1	1.1	—	—	7.6	7.3	9.2	10.2

NOTE: '—' indicates data not available.
SOURCE: The Monitoring the Future Study, the University of Michigan.

[a] 12th grade only: Data based on four of six forms; N is four-sixths of N indicated.

[b] In 1995, the heroin question was changed in three of six forms for 12th graders and in one of two forms for 8th and 10th graders. Separate questions were asked for use with injection and without injection. Data presented here represent the combined data from all forms. In 1996, the heroin question was changed in the remaining 8th and 10th grade form.

[c] Only drug use which was not under doctor's orders is included here.

[d] Parental education is an average score of mother's education and father's education reported on the following scale: (1) Completed grade school or less, (2) Some high school, (3) Completed high school, (4) Some college, (5) Completed college, (6) Graduate or professional school after college. Missing data was allowed on one of the two variables.

TABLE 4-6 (cont.)

Annual Prevalence of Use of Various Drugs by Subgroups Eighth, Tenth, and Twelfth Graders, 1997

(Entries are percentages)

	Barbiturates[a]			Tranquilizers[b]			Alcohol			Been Drunk[c]			Cigarettes			Smokeless Tobacco			Steroids[c]		
Grade:	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th
Total	—	—	5.1	2.9	4.9	4.7	45.5	65.2	74.8	18.4	40.7	53.2	—	—	—	—	—	—	1.0	1.2	1.4
Sex:																					
Male	—	—	5.3	2.6	4.7	5.4	45.5	65.9	75.7	17.9	41.6	55.5	—	—	—	—	—	—	1.3	1.8	2.5
Female	—	—	4.8	3.2	5.2	3.9	45.3	64.5	73.6	18.7	39.9	50.3	—	—	—	—	—	—	0.7	0.6	0.5
College Plans:																					
None or under 4 yrs.	—	—	6.6	5.8	8.6	6.2	60.2	75.2	78.0	32.8	54.2	57.1	—	—	—	—	—	—	2.4	2.4	2.3
Complete 4 yrs.	—	—	4.6	2.6	4.3	4.0	44.0	63.6	73.8	16.8	38.6	51.4	—	—	—	—	—	—	0.8	1.0	1.2
Region:																					
Northeast	—	—	5.7	2.5	3.6	5.3	46.4	67.9	80.0	17.4	41.1	57.2	—	—	—	—	—	—	1.0	0.9	2.1
North Central	—	—	4.4	2.4	3.7	3.5	44.9	64.6	74.5	18.2	41.6	52.0	—	—	—	—	—	—	1.0	1.2	2.1
South	—	—	5.8	3.3	7.3	5.4	47.4	64.4	72.0	18.9	40.3	52.3	—	—	—	—	—	—	0.9	1.4	0.5
West	—	—	4.2	3.0	3.7	4.3	41.6	64.3	74.2	18.3	39.9	52.2	—	—	—	—	—	—	1.1	1.3	1.6
Population Density:																					
Large MSA	—	—	4.2	2.1	3.9	4.2	44.8	63.5	74.8	16.2	37.6	52.3	—	—	—	—	—	—	0.9	1.0	0.8
Other MSA	—	—	5.0	3.2	4.4	4.8	45.7	65.9	74.5	18.5	41.1	52.4	—	—	—	—	—	—	0.9	1.2	1.7
Non-MSA	—	—	6.4	3.2	7.0	5.1	45.8	65.7	75.3	20.5	43.6	55.7	—	—	—	—	—	—	1.2	1.5	1.6
Parental Education:[d]																					
1.0-2.0 (Low)	—	—	4.3	4.3	4.7	3.9	51.8	64.4	69.1	24.4	36.6	46.1	—	—	—	—	—	—	1.4	1.7	3.4
2.5-3.0	—	—	4.9	3.1	5.3	4.3	49.5	68.0	75.0	19.7	41.8	52.1	—	—	—	—	—	—	0.9	1.1	1.4
3.5-4.0	—	—	6.0	3.2	5.5	4.6	48.9	66.8	74.7	21.1	42.6	51.0	—	—	—	—	—	—	1.2	1.4	1.1
4.5-5.0	—	—	5.1	2.4	4.2	5.4	43.4	63.3	76.7	17.2	40.4	56.7	—	—	—	—	—	—	0.9	1.0	1.2
5.5-6.0 (High)	—	—	4.6	2.7	4.4	5.1	39.0	63.8	75.7	14.0	40.6	55.4	—	—	—	—	—	—	1.2	1.1	1.3

NOTE: '—' indicates data not available.
SOURCE: The Monitoring the Future Study, the University of Michigan.

[a] Only drug use which was not under doctor's orders is included here.

[b] Only drug use not under a doctor's orders is included here.

[c] 12th grade only: Data based on two of six forms; N is two-sixths of N indicated.

[d] Parental education is an average score of mother's education and father's education reported on the following scale: (1) Completed grade school or less, (2) Some high school, (3) Completed high school, (4) Some college, (5) Completed college, (6) Graduate or professional school after college. Missing data was allowed on one of the two variables.

- In recent years, ***smoking rates*** among seniors have been similar for males and females. In 1997, slightly more twelfth-grade males reported ***daily smoking*** in the past month (25% vs. 24% for females), as well as smoking ***a half-pack or more per day*** (16% for males vs. 13% for females). In the eighth grade, daily smoking rates are very close for both genders (9.0% for males vs. 8.7% for females), and in tenth grade the rates of daily smoking also are close for the two genders (17% for males vs. 19% for females).

- ***Smokeless tobacco*** is used almost exclusively by males. While 19% of the twelfth-grade males reported some use in the prior month, only 1.2% of the females did. Rates of daily use by males are 1.7% among eighth graders, 4.0% among tenth graders, and 8.6% among twelfth graders. The comparable statistics for females are only 0.3%, 0.3%, and 0.2%, respectively. So by twelfth grade, boys are roughly 40 times as likely as girls to be using smokeless or "spit" tobacco on a daily basis.

Differences Related to College Plans

Overall, students who say they probably or definitely will complete four years of college (referred to here as the "college-bound") have lower rates of illicit drug use in secondary school than those who say they probably or definitely will not. (See Tables 4-5 through 4-8 and Figures 5-8 through 5-9 in Chapter 5.) It is interesting to note that while the great majority of students at all three grade levels expect to complete college (see Table 4-6), the proportion who indicate college plans is lower at the upper grade levels, even though the lower grades contain 15% to 20% who eventually will drop out of high school.

For any given drug, the differences between these two self-identified groups of college- or noncollege-bound students tend to be greatest in the eighth grade. This could reflect an earlier age of initiation of drug use for the noncollege-bound and/or the fact that fewer of the eventual dropouts have left school yet, thus increasing the differences in the lower grades.

- Annual ***marijuana*** use is reported by 36% of the college-bound seniors vs. 45% of the noncollege-bound, but among eighth graders it is reported by only 16% of the college-bound vs. 35% of the noncollege-bound.

- Among 1997 seniors who reported using ***any illicit drug other than marijuana*** in the past year, 18% of the college-bound reported any such behavior in the prior year vs. 26% of the noncollege-bound.

- Frequent use of many of these illicit drugs shows even larger contrasts related to college plans (see Table 4-8). ***Daily marijuana*** use among twelfth graders, for example, is 1.7 times as high among those who do not plan to attend college (8.0%) as among the college-bound (4.7%). Among eighth graders, it is 7 times as high, and among tenth graders it is 3.6 times as high.

- Frequent alcohol use also is more prevalent among the noncollege-bound. For example, ***daily drinking*** is reported by 6.0% of the noncollege-bound seniors vs. 3.2% of the college-bound seniors. ***Binge drinking*** (five or more drinks in a row at least once during the preceding two weeks) is reported by 36% of the noncollege-bound seniors vs. 30% of the college-bound. On the other hand, there are only very small differences between the college-bound and noncollege-bound seniors in lifetime, annual, or 30-day prevalence of alcohol use. In the lower grades, there are even larger differences in the various drinking measures, including annual prevalence, between those who say they expect to go to college and those who do not (see Tables 4-6 though 4-8).

- At all three grade levels, two to three times as many noncollege-bound students use ***steroids*** compared to college-bound students. Among the former, annual use rates are 2.4% for eighth and tenth graders and 2.3% for twelfth graders. Among college-bound students, the corresponding rates are 0.8%, 1.0%, and 1.2%.

- By far, the largest and most dramatic difference in substance use between the college- and noncollege-bound involves ***cigarette*** smoking, with 11% of the college-bound seniors smoking ***a half-pack or more daily*** compared with 24% of the noncollege-bound seniors. The proportional differences are even larger in the lower grades: 2.4% vs. 11.6% in eighth grade and 6.3% vs. 22.0% in tenth grade. (The absence of dropouts by twelfth grade undoubtedly reduces the ratio, since dropouts have a particularly high rate of smoking.)

Regional Differences

Notable regional differences in rates of illicit drug use among high school seniors may be observed in Tables 4-5 through 4-8 and Figure 5-10a-b in Chapter 5. See Figure 4-4 for a ***regional division*** map of the states included in the four regions of the country as defined by the Census Bureau.

- In 1997, the overall rate of illicit drug use was fairly similar among the regions: the highest rate is in the Northeast, where 48% of seniors said they used an ***illicit drug*** in the past year, followed by the West (46%) and the North Central (41%). The South continues to have the lowest rate, with 39% of the seniors reporting any illicit drug during the year (see Figure 5-10a in Chapter 5).

- At present, there is little regional variation in terms of the percentage of seniors using some ***illicit drug other than marijuana*** in the past year. The Northeast region is highest on this index (24%), closely followed by the other three regions (at 19% to 21%).

- Among twelfth graders, there has been little difference in ***marijuana*** use among the regions, except that the South typically has been lower than the other three. Among the younger students, annual prevalence is generally somewhat higher in the West than in the other three regions. In 1997, annual prevalence among eighth graders in the West was 21%, compared to 17% in the North Central and the South, and 16% in the Northeast.

- In the past, regional differences in ***cocaine*** use have been the largest observed. The West has tended to rank relatively high in the use of an ***illicit drug other than marijuana*** due in part to a high level of cocaine use. Annual prevalence of ***cocaine*** and ***crack*** is still highest in the West for all grade levels. The West also ranks first among the regions in eighth graders' use of ***marijuana, LSD***, and ***other cocaine***.

  Other specific illicit substances vary in the extent to which they show regional variation, as Table 4-6 illustrates for the annual prevalence measure.

- There consistently has been a large regional difference in the use of ***ice***, or crystal methamphetamine. The highest rate in 1997 among seniors was in the West at 3.7% annual prevalence, followed by the Northeast (2.8%), the North Central (1.9%), and the South (1.6%).

- The South has consistently shown the lowest rates for annual use of ***marijuana*** in twelfth grade.

- The Northeast stands out for having highest usage rates among seniors of ***marijuana***, ***inhalants*** (unadjusted), ***hallucinogens***, ***LSD, heroin, other opiates***, and ***stimulants***. The Northeast also has the highest rate of use ***inhalants*** among tenth graders.

- Among seniors, the North Central region has the highest 30-day prevalence rate for ***smokeless tobacco*** and the lowest usage rates for ***hallucinogens, cocaine, other cocaine,*** and ***heroin***.

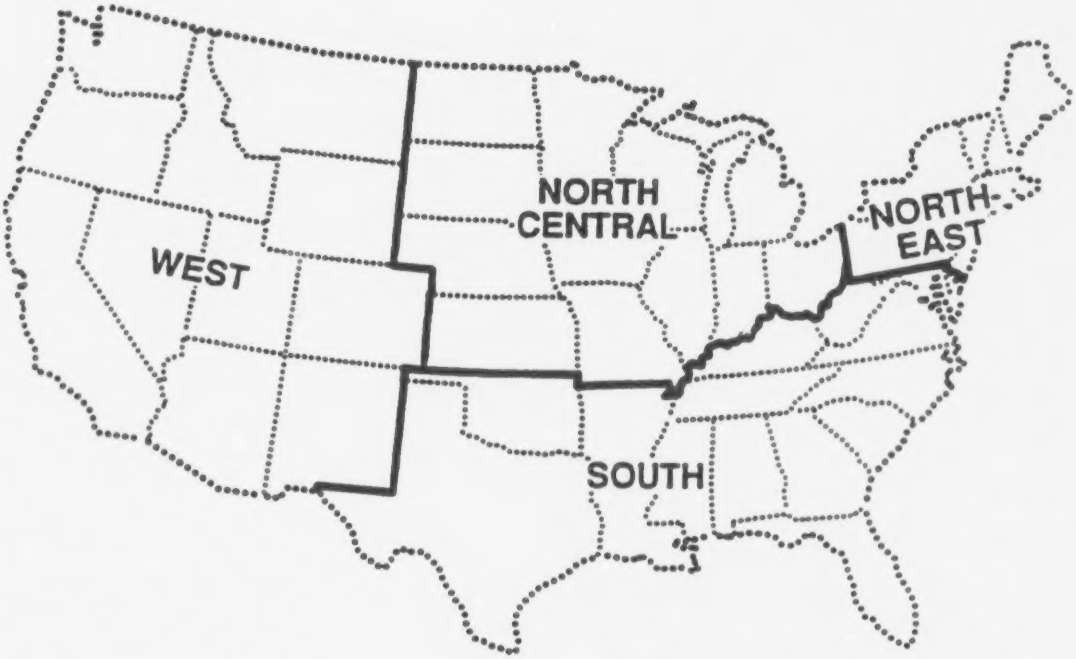
- Rates of ***daily smokeless tobacco*** use are highest in the South for eighth and tenth graders.

- As has been true for some years, the annual prevalence rates of ***alcohol*** use among seniors are somewhat lower in the South and West than in the Northeast and North Central regions, though there is little or no regional difference in the lower grades. The same is true for ***binge drinking***, though it is clearly lowest in the West among twelfth graders.

- The Northeast and North Central regions also have higher rates of ***daily smoking*** in twelfth grade (29% and 28%, respectively) than the South and the West (23% and 18%, respectively). In the lower grades, too, the West has appreciably lower rates of daily smoking, and the differences among the other regions are modest (Table 4-8).

FIGURE 4-4

States Included in the Four Regions of the Country


NORTH CENTRAL
WEST
NORTH-EAST
SOUTH

These are the four major regions of the country as defined by the U.S. Bureau of the Census.

Differences Related to Population Density

Three levels of population density (or urbanicity) have been distinguished for analytical purposes: (1) large MSAs, which are the largest Metropolitan Statistical Areas in the 1990 Census; (2) other MSAs, which are the remaining Metropolitan Statistical Areas; and (3) non-MSAs, which are the sampling areas not designated as metropolitan by the Census. See Appendix B for further details.

In general, the differences in the use of most illicit drugs across these different sizes of community are small, reflecting how widely illicit drug use has diffused through the population (see Tables 4-5 through 4-8).

- In twelfth grade, annual ***marijuana*** use is somewhat lower in the non-urban areas (35%) than in the large metropolitan areas (38%) or in the other metropolitan areas (41%).
- On the other hand, ***stimulant*** use is somewhat higher among eighth-, tenth-, and twelfth-grade students in non-urban areas than in the metropolitan areas.
- In all grades, ***binge drinking*** is inversely related to community size, although the differences are not large (Table 4-8).
- ***Daily cigarette*** use is highest in the non-urban areas for all three grade levels, although, again, the differences are not large (Table 4-8).
- ***Smokeless tobacco*** use also is highest in the non-urban areas at all three grade levels, but in this case the differences are large. Current prevalence (past 30-days) is two to three times as high in the non-urban areas as in the most urban (e.g., for eighth graders, 30-day prevalence is 3.6% in the large MSAs, 4.7% in the other MSAs, and 9.0% in the non-MSAs). Daily use of smokeless tobacco is even more concentrated in the more rural areas (see Table 4-8). Clearly, the use of smokeless or "spit" tobacco tends to be concentrated among rural males.

TABLE 4-7

Thirty-Day Prevalence of Use of Various Drugs by Subgroups Eighth, Tenth, and Twelfth Graders, 1997

(Entries are percentages)

	Approx N			Marijuana			Inhalants[a,b]			Hallucinogens[b]			LSD			MDMA[c]		
Grade	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th
Total	*18,600*	*15,500*	*15,400*	10.2	20.5	23.7	5.6	3.0	2.5	1.8	3.3	3.9	1.5	2.8	3.1	1.0	1.3	1.6
Sex:																		
Male	*8,600*	*7,400*	*7,100*	11.4	23.0	26.4	5.1	3.0	3.3	2.2	4.0	5.1	1.8	3.4	4.1	1.3	1.9	2.3
Female	*9,300*	*7,800*	*7,700*	8.9	17.9	20.3	5.8	2.9	1.8	1.3	2.5	2.7	1.1	2.0	2.0	0.7	0.9	0.9
College Plans																		
None or under 4 yrs	*1,900*	*2,200*	*3,200*	23.8	34.7	29.3	9.2	5.7	3.6	5.2	6.7	4.3	4.4	6.1	3.8	3.0	2.4	1.2
Complete 4 yrs	*15,800*	*13,000*	*11,000*	8.4	18.1	21.5	5.2	2.5	2.3	1.4	2.7	3.6	1.1	2.2	2.6	0.8	1.2	1.6
Region:																		
Northeast	*3,400*	*3,300*	*3,300*	9.0	21.6	27.0	5.8	2.9	3.6	1.2	2.3	5.4	0.9	1.6	3.9	0.5	1.2	2.0
North Central	*4,100*	*3,900*	*4,100*	10.4	19.8	21.8	5.7	3.0	2.4	1.9	3.0	2.6	1.5	2.5	2.1	0.8	1.0	0.6
South	*7,200*	*5,500*	*5,300*	9.7	20.1	20.9	5.4	3.0	2.1	1.7	3.6	4.1	1.5	3.2	3.3	0.9	1.7	2.5
West	*3,900*	*2,800*	*2,700*	11.9	21.1	27.8	5.5	2.9	2.1	2.3	4.0	4.1	1.9	3.6	2.8	1.7	1.2	1.1
Population Density																		
Large MSA	*5,000*	*4,300*	*4,100*	8.7	19.8	21.7	4.6	2.7	2.1	1.3	3.4	3.3	1.1	3.2	2.6	0.8	1.1	1.2
Other MSA	*9,000*	*7,300*	*7,500*	10.7	21.7	25.6	5.5	2.7	2.4	2.1	3.5	4.6	1.8	2.9	3.5	1.3	1.3	2.1
Non-MSA	*4,600*	*3,900*	*3,800*	10.8	19.2	22.0	6.8	3.7	3.3	1.6	2.7	3.3	1.2	2.0	2.6	0.6	1.7	1.1
Parental Education[d]																		
1.0-2.0 (Low)	*1,500*	*1,300*	*1,300*	15.5	20.9	19.9	6.3	4.1	3.3	2.4	2.5	2.8	2.1	2.3	2.4	1.7	2.2	3.0
2.5-3.0	*4,000*	*3,700*	*3,600*	11.6	21.7	23.6	6.4	3.3	2.4	1.9	3.2	3.9	1.5	2.8	3.1	0.9	1.3	1.0
3.5-4.0	*4,300*	*4,100*	*4,100*	11.0	22.5	23.6	5.8	3.0	2.5	2.0	3.4	4.1	1.7	2.9	3.3	1.2	1.6	1.4
4.5-5.0	*4,500*	*3,700*	*3,500*	9.0	19.2	24.7	4.9	2.7	2.6	1.4	3.6	3.8	1.1	2.9	2.9	0.8	0.6	1.2
5.5-6.0 (High)	*2,600*	*1,900*	*2,100*	6.7	17.1	22.9	5.2	2.3	2.1	1.6	2.8	4.2	1.4	2.5	2.9	1.0	1.6	3.0

SOURCE: The Monitoring the Future Study, the University of Michigan

[a] 12th grade only: Data based on five of six forms; N is five-sixths of N indicated.

[b] Unadjusted for known underreporting of certain drugs. See text for details.

[c] 8th and 10th grade only: Data based on one-third of N indicated due to changes in the questionnaire forms. 12th grade only: Data based on one of six forms; N is one-sixth of N indicated.

[d] Parental education is an average score of mother's education and father's education reported on the following scale: (1) Completed grade school or less, (2) Some high school, (3) Completed high school, (4) Some college, (5) Completed college, (6) Graduate or professional school after college. Missing data was allowed on one of the two variables.

(Table continued on next page)

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TABLE 4-7 (cont.)

Thirty-Day Prevalence of Use of Various Drugs by Subgroups
Eighth, Tenth, and Twelfth Graders, 1997

(Entries are percentages)

	Cocaine			Crack			Other Cocaine[a]			Heroin[b]			Other Opiates[c]			Stimulants[c]			Barbiturates[c]		
Grade:	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th
Total	1.1	2.0	2.3	0.7	0.9	0.9	0.8	1.6	2.0	0.6	0.6	0.5	—	—	2.3	3.8	5.1	4.8	—	—	2.1
Sex:																					
Male	1.2	1.9	2.8	0.7	1.0	1.4	0.9	1.6	2.3	0.7	0.7	0.8	—	—	2.7	3.0	4.2	4.5	—	—	2.6
Female	1.0	1.8	1.6	0.6	0.8	0.5	0.7	1.5	1.5	0.4	0.4	0.3	—	—	1.8	4.5	5.8	5.0	—	—	1.7
College Plans:																					
None or under 4 yrs.	2.9	4.8	3.3	1.8	2.0	2.0	2.4	4.1	2.6	1.6	1.3	1.0	—	—	3.8	8.0	8.5	7.2	—	—	3.5
Complete 4 yrs.	0.9	1.5	1.7	0.6	0.8	0.5	0.6	1.2	1.6	0.5	0.5	0.4	—	—	1.8	3.3	4.6	4.1	—	—	1.7
Region:																					
Northeast	1.0	1.2	2.3	0.8	0.5	0.8	0.6	1.0	1.9	0.6	0.4	0.8	—	—	3.0	3.3	4.6	5.6	—	—	2.1
North Central	1.0	1.7	2.0	0.5	1.1	1.0	0.8	1.5	1.8	0.5	0.8	0.3	—	—	2.4	4.3	4.8	5.0	—	—	2.1
South	1.0	2.1	2.1	0.6	0.7	0.7	0.8	1.8	2.1	0.6	0.6	0.6	—	—	2.3	3.8	5.6	4.6	—	—	2.5
West	1.5	2.9	2.9	1.1	1.6	1.5	1.1	2.2	2.3	0.6	0.4	0.4	—	—	1.4	3.7	5.2	3.9	—	—	1.7
Population Density:																					
Large MSA	1.1	2.0	1.5	0.7	1.0	0.8	0.8	1.7	1.3	0.5	0.6	0.5	—	—	1.4	3.0	4.4	3.9	—	—	1.6
Other MSA	1.1	1.7	2.4	0.7	0.6	1.0	0.8	1.5	2.2	0.6	0.6	0.5	—	—	2.7	3.7	4.8	4.6	—	—	2.0
Non-MSA	1.2	2.4	2.8	0.7	1.4	1.1	0.9	1.8	2.4	0.6	0.6	0.5	—	—	2.4	4.9	6.4	6.2	—	—	3.0
Parental Education:[d]																					
1.0-2.0 (Low)	2.4	3.5	2.9	1.5	1.9	1.5	2.1	2.9	3.3	1.0	0.8	0.9	—	—	2.3	4.9	5.2	5.2	—	—	1.9
2.5-3.0	1.0	2.0	2.3	0.7	0.9	1.1	0.6	1.6	1.8	0.8	0.5	0.4	—	—	1.9	4.7	6.2	5.1	—	—	2.2
3.5-4.0	1.2	2.4	2.1	0.6	1.2	0.7	0.8	1.9	1.9	0.3	0.7	0.6	—	—	2.2	4.2	5.8	5.0	—	—	2.3
4.5-5.0	1.0	1.2	2.3	0.6	0.6	1.0	0.8	1.0	1.9	0.5	0.4	0.5	—	—	2.7	3.3	4.2	4.3	—	—	2.2
5.5-6.0 (High)	0.7	1.2	1.6	0.6	0.4	0.6	0.4	1.1	1.4	0.8	0.6	0.5	—	—	2.4	2.9	3.8	4.5	—	—	1.9

NOTE: '—' indicates data not available.
SOURCE: The Monitoring the Future Study, the University of Michigan.

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[a] 12th grade only. Data based on four of six forms; N is four-sixths of N indicated.

[b] In 1995, the heroin question was changed in three of six forms for 12th graders and in one of two forms for 8th and 10th graders. Separate questions were asked for use with injection and without injection. Data presented here represent the combined data from all forms. In 1996, the heroin question was changed in the remaining 8th and 10th grade form.

[c] Only drug use which was not under doctor's orders is included here.

[d] Parental education is an average score of mother's education and father's education reported on the following scale: (1) Completed grade school or less, (2) Some high school, (3) Completed high school, (4) Some college, (5) Completed college, (6) Graduate or professional school after college. Missing data was allowed on one of the two variables.

(Table continued on next page)

TABLE 4-7 (cont.)

Thirty-Day Prevalence of Use of Various Drugs by Subgroups Eighth, Tenth, and Twelfth Graders, 1997

(Entries are percentages)

	Tranquilizers[a]			Alcohol			Been Drunk[b]			Cigarettes			Smokeless Tobacco[c]			Steroids[b]		
Grade	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th
Total	1.2	2.2	1.8	24.5	40.1	52.7	8.2	22.4	34.2	19.4	29.8	36.5	5.5	8.9	9.7	0.5	0.7	1.0
Sex:																		
Male	1.2	2.2	2.3	25.2	42.5	56.2	8.4	24.6	39.2	19.1	28.2	37.3	9.9	14.9	18.7	0.7	1.0	1.8
Female	1.2	2.1	1.3	23.9	37.9	48.9	7.9	20.2	29.1	19.5	31.1	35.2	1.5	2.7	1.2	0.2	0.3	0.2
College Plans:																		
None or under 4 yrs	2.8	4.3	2.9	40.2	51.6	56.1	18.7	35.5	38.1	40.0	47.2	45.7	12.6	18.5	16.9	1.3	1.4	2.0
Complete 4 yrs	1.0	1.8	1.4	22.8	38.1	51.4	7.1	20.3	32.3	16.9	26.8	33.1	4.6	7.2	7.4	0.4	0.6	0.7
Region:																		
Northeast	1.1	1.7	2.0	24.8	41.1	56.7	7.9	21.9	35.9	18.0	29.3	40.6	3.2	9.3	6.9	0.4	0.6	1.4
North Central	1.1	1.7	1.4	22.8	38.6	51.5	8.2	23.3	33.7	20.0	31.7	39.3	6.8	7.1	13.4	0.5	0.7	1.4
South	1.2	3.3	2.1	26.4	40.8	51.1	8.3	22.0	34.5	21.0	32.2	35.0	6.7	10.2	9.0	0.4	0.7	0.3
West	1.2	1.2	1.6	22.7	39.9	52.7	8.3	22.6	32.7	17.1	23.2	30.5	4.1	8.2	9.1	0.6	0.7	1.2
Population Density:																		
Large MSA	0.9	1.6	1.3	23.1	37.8	51.1	6.7	20.7	31.5	15.8	26.6	34.9	3.6	4.2	6.5	0.4	0.5	0.3
Other MSA	1.2	2.1	1.9	24.9	40.2	53.4	8.6	21.8	33.7	19.7	28.9	35.7	4.7	8.3	7.4	0.4	0.7	1.2
Non-MSA	1.5	2.9	2.2	25.4	42.6	52.9	9.2	25.5	38.2	22.8	34.9	40.0	9.0	14.7	17.9	0.6	0.7	1.3
Parental Education:[d]																		
1.0-2.0 (Low)	2.2	2.5	1.8	29.7	39.2	43.8	11.5	19.7	23.7	26.9	28.2	31.2	8.3	9.0	5.8	0.8	1.2	2.5
2.5-3.0	1.3	2.4	1.6	26.2	41.1	51.0	9.3	22.5	31.5	22.4	33.2	36.5	6.0	9.4	10.7	0.4	0.5	1.1
3.5-4.0	1.5	2.2	1.9	27.8	41.6	52.1	10.2	24.1	32.7	20.9	30.9	35.6	6.5	10.3	10.4	0.6	0.8	0.6
4.5-5.0	0.7	2.0	2.2	22.6	39.3	55.3	6.7	22.3	37.7	16.2	28.5	37.5	4.8	7.2	9.1	0.4	0.5	0.6
5.5-6.0 (High)	1.0	1.8	1.7	20.5	38.9	57.4	5.8	22.4	39.8	15.3	24.6	38.5	3.7	8.3	9.9	0.6	0.8	0.9

SOURCE: The Monitoring the Future Study, the University of Michigan.

[a] Only drug use not under a doctor's orders is included here.

[b] 12th grade only: Data based on two of six forms; N is two-sixths of N indicated.

[c] 8th and 10th grade only: Data based on two of four forms; N is one-half of N indicated. 12th grade only: Data based on one of six forms; N is one-sixth of N indicated.

[d] Parental education is an average score of mother's education and father's education reported on the following scale: (1) Completed grade school or less, (2) Some high school, (3) Completed high school, (4) Some college, (5) Completed college, (6) Graduate or professional school after college. Missing data was allowed on one of the two variables.

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TABLE 4-8

Thirty-Day Prevalence of Daily Use of Marijuana, Alcohol, and Tobacco by Subgroups Eighth, Tenth, and Twelfth Graders, 1997

	Percent who used daily in last thirty days																	
	Marijuana			Alcohol						Cigarettes						Smokeless Tobacco[a]		
	Daily			Daily			5+ drinks[b]			One or more daily			Half-pack or more daily			Daily		
Grade:	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th
Total	1.1	3.7	5.8	0.8	1.7	3.9	14.5	25.1	31.3	9.0	18.0	24.6	3.5	8.6	14.3	1.0	2.2	4.4
Sex:																		
Male	1.4	5.2	8.1	0.9	2.5	5.7	15.3	28.6	37.9	9.0	17.2	24.8	3.7	8.9	15.5	1.7	4.0	8.6
Female	0.6	2.1	3.1	0.6	0.8	1.9	13.5	21.7	24.4	8.7	18.5	23.6	3.1	8.2	12.6	0.3	0.3	0.2
College Plans:																		
None or under 4 yrs	4.2	9.5	8.0	2.0	4.0	6.0	30.3	39.4	36.2	25.4	35.4	35.6	11.6	22.0	23.5	3.6	6.3	9.1
Complete 4 yrs	0.6	2.6	4.7	0.6	1.3	3.2	12.5	22.7	29.5	6.9	15.0	20.6	2.4	6.3	11.0	0.6	1.5	2.7
Region:																		
Northeast	0.9	3.9	6.9	0.8	1.5	3.7	13.0	23.4	33.5	8.8	18.0	29.4	3.7	8.8	19.4	0.6	1.5	3.5
North Central	1.2	3.8	5.2	0.8	1.6	4.5	14.2	24.0	31.6	10.3	19.5	28.0	4.1	9.3	16.9	1.2	1.4	7.0
South	0.9	3.9	5.3	0.8	1.9	4.1	15.3	25.6	30.6	9.5	20.5	22.6	3.7	10.2	12.3	1.5	3.5	3.6
West	1.3	2.7	6.3	0.7	1.8	3.2	14.6	27.9	29.6	6.8	11.1	17.5	2.2	4.4	8.2	0.2	1.7	3.0
Population Density:																		
Large MSA	0.8	3.6	4.6	0.4	1.2	3.9	13.7	22.5	29.9	7.0	15.7	23.7	2.7	6.6	12.8	0.5	0.8	3.3
Other MSA	1.2	3.8	6.6	0.9	1.6	4.0	14.0	24.8	31.1	8.7	16.9	23.9	3.2	8.0	14.3	0.8	1.7	3.3
Non-MSA	1.1	3.6	5.4	0.9	2.5	3.9	16.4	28.9	33.2	11.7	22.5	26.8	4.8	12.0	16.0	1.6	4.6	7.7
Parental Education:[c]																		
1.0-2.0 (Low)	2.2	3.2	4.9	1.6	2.1	3.8	22.5	25.5	22.6	14.3	17.7	21.9	6.4	10.8	11.9	3.2	3.8	1.3
2.5-3.0	0.9	4.3	5.8	0.5	2.1	3.7	16.2	26.1	30.4	11.7	22.1	26.0	4.8	11.4	16.4	1.1	2.0	5.8
3.5-4.0	1.3	4.2	5.7	0.8	1.9	3.2	15.8	26.5	31.0	9.2	18.9	23.8	3.5	8.8	13.9	0.9	2.4	3.7
4.5-5.0	0.8	3.0	6.1	0.7	1.2	3.9	11.7	23.1	32.4	6.8	15.6	24.9	2.2	6.5	14.5	0.8	1.7	3.9
5.5-6.0 (High)	0.6	2.2	4.8	0.5	0.8	4.7	10.6	24.0	34.9	5.5	12.0	22.9	1.8	4.8	11.2	0.4	1.9	5.0

NOTE: See Table 8 for sample sizes.
SOURCE: The Monitoring the Future Study, the University of Michigan

[a] 8th and 10th grade only: Data based on two of four forms; N is one-half of N indicated. 12th grade only: Data based on one of six forms; N is one-sixth of N indicated.

[b] This measure refers to use of five or more drinks in a row in the past two weeks.

[c] Parental education is an average score of mother's education and father's education reported on the following scale: (1) Completed grade school or less, (2) Some high school, (3) Completed high school, (4) Some college, (5) Completed college, (6) Graduate or professional school after college. Missing data was allowed on one of the two variables.

Differences Related to Parental Education

The best measure of family socioeconomic status available in the study is an index of parental education, which is based on the average of the educational levels reported for both parents by the respondent (or on the data for one parent, if data for both are not available). The scale values on the original questions are: (1) completed grade school or less, (2) some high school, (3) completed high school, (4) some college, (5) completed college, and (6) graduate or professional school after college. The respondent is instructed to indicate the highest level of education each parent attained. The average educational level obtained by students' parents has been rising over the years. Table 4-6 gives the distributions for 1997 for each grade level.

- By senior year there is rather little association with family socioeconomic status for ***most drugs***. This again speaks to the extent to which illicit drug use has permeated all social strata.

- However, an examination of Table 4-6 shows that in eighth grade, the lowest socioeconomic stratum (which represents less than 10% of the population) has a somewhat higher annual prevalence for nearly all drugs. Few of these relationships are ordinal: rather, the bottom category, or sometimes two categories, stand out as having higher usages rates at this early age than the others.

  Many of these differences have disappeared by tenth grade, and by twelfth grade some of these relationships have actually reversed, with the highest rate of use observed in the upper socioeconomic strata. This is true for ***marijuana***, ***inhalants***, ***hallucinogens***, ***LSD***, and ***tranquilizers*** but *not* for ***cocaine, crack, heroin,*** or ***stimulants***. For most of these latter drugs the lower strata (or lowest stratum in some cases) remain the heaviest using at all three grade levels.

  The diminished socioeconomic differences by twelfth grade could be explained by the upper- and middle-class youngsters "catching up" with their more precocious peers from poorer backgrounds. But the diminished differences may also be explained by the fact that dropping out of school is correlated both with socioeconomic status (negatively) and with drug use (positively).

- ***Daily smoking*** and ***smokeless tobacco*** use shows mostly inverse ordinal relationships with parental education in eighth and tenth grades, except that sometimes the lowest stratum has somewhat lower use than the next to lowest stratum (Table 4-8). Thus, daily cigarette smoking and smokeless tobacco use bear somewhat negative relationships to parental education among the younger students, although these relationships are less clear by twelfth grade.

Racial/Ethnic Differences

Racial/ethnic comparisons for African Americans, Hispanics, and whites were added to this monograph series for the first time in 1991.[24] Although the design of this project did not include an oversampling of any minority groups, the large overall sample sizes at each grade level do produce fair numbers of African American and Hispanic respondents each year. In the tabular data discussed here, we combine data from two adjacent years to increase the reliability of the estimates. We caution the reader that the sampling error of differences between groups is likely to be larger than would be true for other demographic and background variables such as sex or college plans, because African Americans and Hispanics are more likely to be clustered by school (see Appendix D). Table 4-9 gives the lifetime, annual, 30-day, and daily use statistics for the three racial/ethnic groups at all three grade levels, along with the numbers of cases upon which the estimates are based.

- Several general points can be derived from Table 4-9. First, for virtually ***all drugs***, licit and illicit, African American seniors reported lifetime and annual prevalence rates that are lower—sometimes dramatically lower—than those for white or Hispanic seniors. This is mostly true for the 30-day and daily prevalence statistics, as well, although there are a few exceptions.

  Second, the same can be said for African American students in eighth and tenth grades, therefore the low usage rates in twelfth grade almost certainly are not due to differential dropout rates.

- The third general point is that whites in the twelfth grade have the highest lifetime and annual prevalence rates for many drugs, including: ***inhalants***, ***hallucinogens***, ***LSD*** specifically, ***opiates other than heroin***, ***stimulants***, ***barbiturates***, ***tranquilizers***, ***alcohol***, ***cigarettes***, and ***smokeless tobacco***. Not all of these findings replicate at lower grade levels.

- Hispanics, taken as a group, have the highest lifetime and annual prevalence rates in senior year for ***cocaine***, ***crack***, ***other cocaine***, and ***steroids***. Their rate of ***cocaine*** use is particularly high, compared to the other two racial/ethnic groups. Further, it should be remembered that Hispanics have a considerably higher dropout rate, based on Census Bureau statistics, than whites or African Americans, which would tend to diminish any such differences by senior year.

- An examination of the racial/ethnic comparisons at lower grade levels shows Hispanics having higher rates of use of nearly all the drugs on which they have the highest prevalence in twelfth grade, as well as a number of other drugs. For example, in eighth grade 29% of Hispanic students reported ever having used ***marijuana***, compared to 22% of white students and 22% of African American students. For ***tranquilizers*** the lifetime prevalence in eighth grade for Hispanics, whites, and African Americans is 6%, 5%, and 2% and for ***cigarettes***, 51%, 50%, and 42%, respectively. In other words, in eighth grade—before most dropping out occurs—Hispanics have the highest rates of use of all the drugs except ***inhalants***, ***hallucinogens***, ***stimulants***, and ***smokeless tobacco***; whereas, by twelfth grade, whites have the highest rates of use of most drugs. Certainly the considerably higher dropout rate among Hispanics could explain this shift, and it may be the most plausible explanation. Another explanation worth considering is that Hispanics may tend to start using drugs at a younger age, but that whites overtake them at older ages. These explanations are not mutually exclusive, of course, and to some degree both explanations may hold true.

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[24] We recognize that the Hispanic category is a broad one, encompassing people with various Latin American and Caribbean origins, but for the purposes of this monograph the sample sizes unfortunately are too small to differentiate among them. For a more complete treatment of racial/ethnic differences, in which additional subgroups are distinguished and males and females are examined separately within each racial/ethnic category, see Bachman, J.G., Wallace, J.M., Jr., O'Malley, P.M., Johnston, L.D., Kurth, C.L., & Neighbors, H.W. (1991). Racial/ethnic differences in smoking, drinking, and illicit drug use among American high school seniors, 1976-1989. *American Journal of Public Health, 81*, 372-377.

- Looking at the daily use figures, we find exceptionally large absolute and proportional differences between the three groups in their rates of ***daily cigarette smoking***. Among twelfth graders, whites have a 28% daily smoking rate, Hispanics 14% (which may be low, in part, because of their higher dropout rate), and African Americans only 7%. In fact, African Americans have much lower smoking rates at all grade levels.

- Not only do African American students have the lowest lifetime, annual, and 30-day prevalence rates for alcohol use, they also tend to have the lowest rates for ***daily drinking***.

- Recent ***binge drinking*** is also lowest among African Americans at all grade levels: in twelfth grade, 13% vs. 35% for whites and 28% for Hispanics. In eighth grade, Hispanics have the highest rate at 21%, compared with 15% for whites and 10% for African Americans.

TABLE 4-9

Racial/Ethnic Comparisons of Lifetime, Annual, Thirty-Day, and Daily Prevalence of Use of Various Drugs Eighth, Tenth, and Twelfth Graders

NOTE: Percentages are based on 1996 and 1997 data combined.[a]

	Marijuana			Inhalants[b,c]			Hallucinogens[c]			LSD			MDMA[d]			Cocaine		
Grade:	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th
Lifetime:																		
White	22.0	41.1	48.3	24.0	21.3	18.9	6.3	11.9	16.6	5.5	10.7	15.0	3.8	6.2	7.6	4.4	6.7	8.1
Black	21.7	38.1	41.3	8.9	6.2	5.4	1.0	1.6	2.6	0.9	1.4	2.3	0.4	1.0	0.9	1.1	1.3	1.4
Hispanic	28.6	46.5	48.6	20.9	17.3	13.7	6.3	11.0	13.0	5.7	10.1	11.8	4.2	5.6	6.2	7.5	12.7	13.0
Annual:																		
White	17.8	35.3	38.7	14.1	10.4	8.6	4.5	8.9	11.6	3.9	7.9	10.1	2.7	4.8	5.2	3.0	4.4	5.5
Black	15.3	28.4	30.4	3.8	2.3	1.9	0.7	1.0	1.9	0.6	0.9	1.6	0.3	0.8	0.4	0.5	0.8	0.9
Hispanic	21.8	36.8	36.4	11.4	7.9	4.7	4.2	7.3	7.3	3.9	6.7	6.3	2.5	3.6	2.8	4.3	8.5	7.6
30-Day:																		
White	10.6	21.2	23.6	6.5	3.5	3.0	2.0	3.4	4.3	1.6	2.9	3.2	1.1	1.7	2.2	1.2	1.7	2.2
Black	9.0	16.5	18.5	1.9	1.2	0.9	0.4	0.6	0.9	0.3	0.5	0.7	0.1	0.2	0.4	0.3	0.4	0.5
Hispanic	13.1	21.3	21.2	5.5	2.9	1.7	2.3	3.3	2.9	2.1	2.9	2.1	1.3	1.6	1.1	2.1	3.6	3.3
Daily:																		
White	1.1	3.7	5.5	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Black	1.3	2.8	3.9	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Hispanic	1.8	3.5	4.5	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

NOTE: The following sample sizes are based on the 1996 and 1997 surveys combined:

Sample Sizes:	8th Grade	10th Grade	12th Grade
White	21,400	20,900	19,800
Black	4,700	3,200	3,600
Hispanic	4,200	3,200	2,800

SOURCE: The Monitoring the Future Study, the University of Michigan.

(Table continued on next page)

TABLE 4-9 (cont.)

Racial/Ethnic Comparisons of Lifetime, Annual, Thirty-Day, and Daily Prevalence of Use of Various Drugs Eighth, Tenth, and Twelfth Graders

NOTE: Percentages are based on 1996 and 1997 data combined.[a]

	Crack			Other Cocaine[e]			Heroin[f]			Other Opiates[g]			Stimulants[g]			Barbiturates[g]			Tranquilizers[g]		
Grade:	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th
Lifetime:																					
White	2.7	3.5	3.5	3.6	5.6	7.6	2.4	2.2	2.1	—	—	10.8	14.3	19.6	18.3	—	—	9.0	5.3	8.1	8.7
Black	0.8	0.6	0.7	0.8	1.1	1.1	0.7	0.2	0.7	—	—	2.8	5.6	5.7	5.2	—	—	1.6	2.3	1.9	1.5
Hispanic	4.7	5.8	6.6	6.3	11.5	12.0	2.8	2.5	2.2	—	—	5.7	13.0	15.8	12.9	—	—	7.1	6.4	7.0	6.9
Annual:																					
White	1.7	2.2	2.2	2.5	3.7	5.0	1.6	1.4	1.2	—	—	7.1	9.9	14.2	11.4	—	—	5.9	3.4	5.6	5.5
Black	0.4	0.4	0.5	0.3	0.6	0.7	0.4	0.2	0.5	—	—	1.8	3.0	3.1	2.8	—	—	1.0	1.2	0.9	0.8
Hispanic	2.8	3.7	4.2	3.3	7.5	6.9	1.7	1.3	1.1	—	—	3.1	8.1	9.8	7.3	—	—	3.7	3.5	3.5	3.8
30-Day:																					
White	0.7	0.8	0.9	0.9	1.3	1.9	0.6	0.5	0.5	—	—	2.5	4.8	6.1	5.1	—	—	2.4	1.5	2.2	2.2
Black	0.3	0.2	0.4	0.2	0.3	0.3	0.3	0.1	0.5	—	—	0.9	1.3	1.4	1.4	—	—	0.6	0.7	0.5	0.4
Hispanic	1.3	1.5	2.1	1.7	3.3	2.7	1.0	0.7	0.5	—	—	1.3	3.9	4.2	3.3	—	—	1.4	1.5	1.3	1.6
Daily:																					
White	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Black	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Hispanic	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

SOURCE: The Monitoring the Future Study, the University of Michigan.

(Table continued on next page)

TABLE 4-9 (cont.)

Racial/Ethnic Comparisons of Lifetime, Annual, Thirty-Day, and Daily Prevalence of Use of Various Drugs Eighth, Tenth, and Twelfth Graders

NOTE: Percentages are based on 1996 and 1997 data combined.[a]

	Alcohol			Been Drunk[h]			5+ Drinks[i]			Cigarettes			Smokeless Tobacco[d]			Steroids[h]		
Grade:	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th
Lifetime:																		
White	54.8	73.1	82.7	27.3	52.3	68.0	—	—	—	49.7	63.7	68.3	21.9	31.2	33.2	1.7	2.1	2.1
Black	51.3	63.7	72.1	18.0	31.8	39.3	—	—	—	42.1	45.1	46.1	8.1	9.2	7.7	1.0	0.9	1.8
Hispanic	61.3	76.0	80.5	30.2	50.5	61.4	—	—	—	51.1	60.1	63.9	14.2	17.7	16.7	2.6	1.8	2.9
Annual:																		
White	47.6	67.7	77.0	20.6	44.7	58.7	—	—	—	—	—	—	—	—	—	0.9	1.3	1.2
Black	37.0	50.8	60.2	10.7	20.5	26.8	—	—	—	—	—	—	—	—	—	0.6	0.5	1.5
Hispanic	51.5	68.3	72.7	21.8	38.1	46.2	—	—	—	—	—	—	—	—	—	1.4	1.2	1.6
30-Day:																		
White	26.7	43.0	56.4	9.7	25.0	37.7	—	—	—	22.8	34.4	40.7	7.6	10.4	12.2	0.4	0.6	0.7
Black	17.9	24.6	34.3	4.6	8.6	13.8	—	—	—	10.9	12.8	14.3	2.6	2.8	2.2	0.3	0.4	0.5
Hispanic	29.8	42.8	48.2	10.4	19.5	26.9	—	—	—	19.1	23.0	25.9	4.6	4.6	5.3	0.7	0.6	1.3
Daily:																		
White	0.9	1.6	4.1	—	—	—	15.1	26.9	35.1	11.4	21.4	27.8	1.5	2.5	5.0	—	—	—
Black	0.6	0.7	1.8	—	—	—	9.8	12.7	13.4	3.7	5.6	7.2	0.5	0.4	0.2	—	—	—
Hispanic	1.4	2.0	4.0	—	—	—	20.7	27.5	27.6	8.1	10.8	14.0	0.9	1.3	1.9	—	—	—

NOTE: '—' indicates data not available.
SOURCE: The Monitoring the Future Study, the University of Michigan.

[a] To derive percentages for each racial subgroup, data for the specified year *and* the previous year have been combined to increase subgroup sample sizes and thus provide more stable estimates.
[b] 12th grade only: Data based on five of six forms; N is five-sixths of N indicated.
[c] Unadjusted for known underreporting of certain drugs. See text for details.
[d] 8th and 10th grade only: Data based on one form; N is one-third of N indicated. 12th grade only: Data based on one of six forms; N is one-sixth of N indicated.
[e] 12th grade only: Data based on four of six forms; N is four-sixths of N indicated.
[f] In 1995, the heroin question was changed in three of six forms for 12th graders and in one of two forms for 8th and 10th graders. Separate questions were asked for use with injection and without injection. Data presented here represent the combined data from all forms. In 1996, the heroin question was changed in the remaining 8th and 10th grade form.
[g] Only drug use which was not under a doctor's orders is included here.
[h] 12th grade only: Data based on two of six forms; N is two-sixths of N indicated.
[i] This measure refers to use of five or more drinks in a row in the past two weeks.

Chapter 5

TRENDS IN DRUG USE

The first section of this chapter presents and discusses the long-term trends in drug use among American high school seniors, comparing the 23 graduating classes of 1975 through 1997. Trends are then presented for grades 8 and 10 based on seven years of survey data, 1991 through 1997. As in the previous chapter, the outcomes to be discussed include measures of lifetime use, use during the past year, use during the past month, and daily use.[25] Trends in noncontinuation rates among twelfth graders are examined next. Finally, there is a section on the trends in use observed for the key demographic subgroups discussed earlier: that is, those defined on the dimensions of gender, college plans, region of the country, population density, socioeconomic status, and racial/ethnic group.

TRENDS IN PREVALENCE 1975-1997: TWELFTH GRADERS

Tables 5-1 through 5-4 give trends in lifetime, annual, 30-day, and current daily prevalence of use for all drugs mentioned in this chapter, based on the past 23 graduating classes. Figures 5-1 through 5-4i provide graphic depictions of these trends.

- The years 1978 and 1979 marked the crest of a long and dramatic rise in ***marijuana*** use among American high school seniors (and for that matter, among young people, generally). As Tables 5-1 through 5-3 and Figure 5-4a illustrate, annual and 30-day prevalence of marijuana use leveled between 1978 and 1979, following a steady rise in the preceding years. In 1980, both statistics dropped for the first time and continued to decline every year through 1992, except for a brief pause in 1985. Then, beginning in 1993, annual use among twelfth graders began to rise sharply. In both 1994 and 1995 it increased significantly—by 4 or 5 percentage points each year. In 1996 annual prevalence rose by another percentage point, and in 1997 it rose nearly 3 percentage points. In all, it nearly doubled between 1992 and 1997, from 22% to 39%. Thirty-day use also rose significantly, doubling from the 1992 level of 12% to 24% in 1997.

  Lifetime prevalence first began to drop after 1980, though more gradually than annual or 30-day use.[26] It reached a low 12 years later, in 1992, when it was 33%, but by 1997, 50% of all seniors had tried marijuana before leaving high school. This is still somewhat below the peak level of 60% in 1980.

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[25] The definitions of these behaviors remain the same as in the previous chapter. "Lifetime prevalence" refers to the proportion of the sample indicating use on one or more occasions in their lifetime. "Annual prevalence" refers to use on one or more occasions in the 12 months preceding the survey, "monthly prevalence" (sometimes referred to as "current use" or past 30-day use) refers to use on one or more occasions in the 30-day period preceding the survey, and for most drugs "daily use" refers to use on 20 or more occasions during the prior 30 days. (Daily use is defined differently for cigarettes and smokeless tobacco. See text.)

[26] Lifetime use declines more gradually than annual use or 30-day use because it reflects changes in initiation rates only, whereas annual and 30-day statistics reflect changes in both initiation rates *and* noncontinuation rates.

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TABLE 5-1

Long-Term Trends in Lifetime Prevalence of Use of Various Drugs for Twelfth Graders

	Percent ever used																							
	Class of 1975	Class of 1976	Class of 1977	Class of 1978	Class of 1979	Class of 1980	Class of 1981	Class of 1982	Class of 1983	Class of 1984	Class of 1985	Class of 1986	Class of 1987	Class of 1988	Class of 1989	Class of 1990	Class of 1991	Class of 1992	Class of 1993	Class of 1994	Class of 1995	Class of 1996	Class of 1997	'96–'97 change
Approx. N =	*9400*	*15400*	*17100*	*17800*	*15500*	*15900*	*17500*	*17700*	*16300*	*15900*	*16000*	*15200*	*16300*	*16300*	*16700*	*15200*	*15000*	*15800*	*16300*	*15400*	*15400*	*14300*	*15400*	
Any Illicit Drug[a,b]	55.2	58.3	61.6	64.1	65.1	65.4	65.6	64.4	62.9	61.6	60.6	57.6	56.6	53.9	50.9	47.9	44.1	40.7	42.9	45.6	48.4	50.8	54.3	+3.5s
Any Illicit Drug Other Than Marijuana[a,b]	36.2	35.4	35.8	36.5	37.4	38.7	42.8	41.1	40.4	40.3	39.7	37.7	35.8	32.5	31.4	29.4	26.9	25.1	26.7	27.6	28.1	28.5	30.0	+1.5
Marijuana/Hashish	47.3	52.8	56.4	59.2	60.4	60.3	59.5	58.7	57.0	54.9	54.2	50.9	50.2	47.2	43.7	40.7	36.7	32.6	35.3	38.2	41.7	44.9	49.6	+4.7ss
Inhalants[c]	—	10.3	11.1	12.0	12.7	11.9	12.3	12.8	13.6	14.4	15.4	15.9	17.0	16.7	17.6	18.0	17.6	16.6	17.4	17.7	17.4	16.6	16.1	-0.5
Inhalants, Adjusted[c,d]	—	—	—	—	18.2	17.3	17.2	17.7	18.2	18.0	18.1	20.1	18.6	17.5	18.6	18.5	18.0	17.0	17.7	18.3	17.8	17.5	16.9	-0.6
Amyl/Butyl Nitrites[e,f]	—	—	—	—	11.1	11.1	10.1	9.8	8.4	8.1	7.9	8.6	4.7	3.2	3.3	2.1	1.6	1.5	1.4	1.7	1.5	1.8	2.0	+0.2
Hallucinogens	16.3	15.1	13.9	14.3	14.1	13.3	13.3	12.5	11.9	10.7	10.3	9.7	10.3	8.9	9.4	9.4	9.6	9.2	10.9	11.4	12.7	14.0	15.1	+1.1
Hallucinogens, Adjusted[g]	—	—	—	—	17.7	15.6	15.3	14.3	13.6	12.3	12.1	11.9	10.6	9.2	9.9	9.7	10.0	9.4	11.3	11.7	13.1	14.5	15.4	+0.9
LSD	11.3	11.0	9.8	9.7	9.5	9.3	9.8	9.6	8.9	8.0	7.5	7.2	8.4	7.7	8.3	8.7	8.8	8.6	10.3	10.5	11.7	12.6	13.6	+1.0
PCP[e,f]	—	—	—	—	12.8	9.6	7.8	6.0	5.6	5.0	4.9	4.8	3.0	2.9	3.9	2.8	2.9	2.4	2.9	2.8	2.7	4.0	3.9	-0.1
MDMA (Ecstasy)[e]	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	6.1	6.9	+0.8
Cocaine	9.0	9.7	10.8	12.9	15.4	15.7	16.5	16.0	16.2	16.1	17.3	16.9	15.2	12.1	10.3	9.4	7.8	6.1	6.1	5.9	6.0	7.1	8.7	+1.6s
Crack[h]	—	—	—	—	—	—	—	—	—	—	—	—	5.4	4.8	4.7	3.5	3.1	2.6	2.6	3.0	3.0	3.3	3.9	+0.6s
Other Cocaine[i]	—	—	—	—	—	—	—	—	—	—	—	—	14.0	12.1	8.5	8.6	7.0	5.3	5.4	5.2	5.1	6.4	8.2	+1.8s
Heroin[j]	2.2	1.8	1.8	1.6	1.1	1.1	1.1	1.2	1.2	1.3	1.2	1.1	1.2	1.1	1.3	1.3	0.9	1.2	1.1	1.2	1.6	1.8	2.1	+0.3
Other Opiates[k]	9.0	9.6	10.3	9.9	10.1	9.8	10.1	9.6	9.4	9.7	10.2	9.0	9.2	8.6	8.3	8.3	6.6	6.1	6.4	6.6	7.2	8.2	9.7	+1.5ss
Stimulants[b,k]	22.3	22.6	23.0	22.9	24.2	26.4	32.2	27.9	26.9	27.9	26.2	23.4	21.6	19.8	19.1	17.5	15.4	13.9	15.1	15.7	15.3	15.3	16.5	+1.2
Crystal Meth. (Ice)[j]	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	2.7	3.3	2.9	3.1	3.4	3.9	4.4	4.4	0.0
Sedatives[k,m]	18.2	17.7	17.4	16.0	14.6	14.9	16.0	15.2	14.4	13.3	11.8	10.4	8.7	7.8	7.4	7.5	6.7	6.1	6.4	7.3	7.6	8.2	8.7	+0.5
Barbiturates[k]	16.9	16.2	15.6	13.7	11.8	11.0	11.3	10.3	9.9	9.9	9.2	8.4	7.4	6.7	6.5	6.8	6.2	5.5	6.3	7.0	7.4	7.6	8.1	+0.5
Methaqualone[k,m]	8.1	7.8	8.5	7.9	8.3	9.5	10.6	10.7	10.1	8.3	6.7	5.2	4.0	3.3	2.7	2.3	1.3	1.6	0.8	1.4	1.2	2.0	1.7	-0.3
Tranquilizers[k]	17.0	16.8	18.0	17.0	16.3	15.2	14.7	14.0	13.3	12.4	11.9	10.9	10.9	9.4	7.6	7.2	7.2	6.0	6.4	6.6	7.1	7.2	7.8	+0.6
Alcohol[n]	90.4	91.9	92.5	93.1	93.0	93.2	92.6	92.8	92.6	92.6	92.2	91.3	92.2	92.0	90.7	89.5	88.0	87.5	87.0	—	—	—	—	—
																			80.0	80.4	80.7	79.2	81.7	+2.5ss
Been Drunk[l]	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	65.4	63.4	62.5	62.9	63.2	61.8	64.2	+2.4
Cigarettes	73.6	75.4	75.7	75.3	74.0	71.0	71.0	70.1	70.6	69.7	68.8	67.6	67.2	66.4	65.7	64.4	63.1	61.8	61.9	62.0	64.2	63.5	65.4	+1.9
Smokeless Tobacco[e,o]	—	—	—	—	—	—	—	—	—	—	—	31.4	32.2	30.4	29.2	—	—	32.4	31.0	30.7	30.9	29.8	25.3	-4.5
Steroids[l]	—	—	—	—	—	—	—	—	—	—	—	—	—	—	3.0	2.9	2.1	2.1	2.0	2.4	2.3	1.9	2.4	+0.5

NOTES: Level of significance of difference between the two most recent classes: s = .05, ss = .01, sss = .001. '—' indicates data not available.
SOURCE: The Monitoring the Future Study, the University of Michigan.

Footnotes for Table 5-1 to Table 5-4

[a] Use of "any illicit drug" includes any use of marijuana, LSD, other hallucinogens, crack, other cocaine, or heroin, or any use of other opiates, stimulants, barbiturates, methaqualone (excluded since 1990), or tranquilizers not under a doctor's orders.

[b] Beginning in 1982 the question about stimulant use (i.e., amphetamines) was revised to get respondents to exclude the inappropriate reporting of nonprescription stimulants. The prevalence rate dropped slightly as a result of this methodological change.

[c] Data based on four of five forms in 1976–88; N is four-fifths of N indicated. Data based on five of six forms in 1989–97; N is five-sixths of N indicated.

[d] Adjusted for underreporting of amyl and butyl nitrites. See text for details.

[e] Data based on one form; N is one-fifth of N indicated in 1979–88 and one-sixth of N indicated in 1989–97.

[f] Question text changed slightly in 1987.

[g] Adjusted for underreporting of PCP. See text for details.

[h] Data based on one of five forms in 1986; N is one-fifth of N indicated. Data based on two forms in 1987–89; N is two-fifths of N indicated in 1987–88 and two-sixths of N indicated in 1989. Data based on six forms in 1990–97.

[i] Data based on one form in 1987–89; N is one-fifth of N indicated in 1987–88 and one-sixth of N indicated in 1989. Data based on four of six forms in 1990–97; N is four-sixths of N indicated.

[j] In 1995 the heroin question was changed in half of the questionnaire forms. Separate questions were asked for use with injection and without injection. Data presented here represent the combined data from all forms.

[k] Only drug use which was not under a doctor's orders is included here.

[l] Data based on two of six forms; N is two-sixths of N indicated. Steroid data based on one of six forms in 1989–90; N is one-sixth of N indicated in 1989–90. Steroid data based on two of six forms since 1991; N is two-sixths of N indicated since 1991.

[m] Sedatives: Data based on five forms in 1975-88, six forms in 1989, one form in 1990 (N is one-sixth of N indicated in 1990), and six forms of data adjusted by one-form data beginning in 1991. Methaqualone: Data based on five forms in 1975–88, six forms in 1989, and one of six forms beginning in 1990 (N is one-sixth of N indicated beginning in 1990).

[n] Data based on five forms in 1975–88 and on six forms in 1989–92. In 1993, the question text was changed slightly in three of six forms to indicate that a "drink" meant "more than a few sips." The data in the upper line for alcohol came from the three forms using the original wording (N is three-sixths of N indicated), while the data in the lower line came from the three forms containing the revised wording (N is three-sixths of N indicated). Data for 1994–97 were based on all six forms.

[o] Prevalence of smokeless tobacco was not asked of twelfth graders in 1990 and 1991. Prior to 1990 the prevalence question on smokeless tobacco was located near the end of one twelfth-grade questionnaire form, whereas after 1991 the question was placed earlier and in a different form. This shift could explain the discontinuities between the corresponding data.

SOURCE: The Monitoring the Future Study, the University of Michigan.

TABLE 5-2

Long-Term Trends in Annual Prevalence of Use of Various Drugs for Twelfth Graders

Percent who used in last twelve months

	Class of 1975	Class of 1976	Class of 1977	Class of 1978	Class of 1979	Class of 1980	Class of 1981	Class of 1982	Class of 1983	Class of 1984	Class of 1985	Class of 1986	Class of 1987	Class of 1988	Class of 1989	Class of 1990	Class of 1991	Class of 1992	Class of 1993	Class of 1994	Class of 1995	Class of 1996	Class of 1997	'96-'97 change
Approx. N	*9400*	*15400*	*17100*	*17800*	*15500*	*15900*	*17500*	*17700*	*16300*	*15900*	*16000*	*15200*	*16300*	*16300*	*16700*	*15200*	*15000*	*15800*	*16300*	*15400*	*15400*	*14300*	*15400*	
Any Illicit Drug[a,b]	45.0	48.1	51.1	53.8	54.2	53.1	52.1	49.4	47.4	45.8	46.3	44.3	41.7	38.5	35.4	32.5	29.4	27.1	31.0	35.8	39.0	40.2	42.4	+2.2
Any Illicit Drug Other Than Marijuana[a,b]	26.2	25.4	26.0	27.1	28.2	30.4	34.0	30.1	28.4	28.0	27.4	25.9	24.1	21.1	20.0	17.9	16.2	14.9	17.1	18.0	19.4	19.8	20.7	+0.9
Marijuana/Hashish	40.0	44.5	47.6	50.2	50.8	48.8	46.1	44.3	42.3	40.0	40.6	38.8	36.3	33.1	29.6	27.0	23.9	21.9	26.0	30.7	34.7	35.8	38.5	+2.7
Inhalants[c]	—	3.0	3.7	4.1	5.4	4.6	4.1	4.5	4.3	5.1	5.7	6.1	6.9	6.5	5.9	6.9	6.6	6.2	7.0	7.7	8.0	7.6	6.7	-0.9
Inhalants, Adjusted[c,d]	—	—	—	—	8.9	7.9	6.1	6.6	6.2	7.2	7.5	8.9	8.1	7.1	6.9	7.5	6.9	6.4	7.4	8.2	8.4	8.5	7.3	-1.2s
Amyl/Butyl Nitrites[e,f]	—	—	—	—	6.5	5.7	3.7	3.6	3.6	4.0	4.0	4.7	2.6	1.7	1.7	1.4	0.9	0.5	0.9	1.1	1.1	1.6	1.2	-0.4
Hallucinogens	11.2	9.4	8.8	9.6	9.9	9.3	9.0	8.1	7.3	6.5	6.3	6.0	6.4	5.5	5.6	5.9	5.8	5.9	7.4	7.6	9.3	10.1	9.8	-0.3
Hallucinogens, Adjusted[g]	—	—	—	—	11.8	10.4	10.1	9.0	8.3	7.3	7.6	7.6	6.7	5.8	6.2	6.0	6.1	6.2	7.8	7.8	9.7	10.7	10.0	-0.7
LSD	7.2	6.4	5.5	6.3	6.6	6.5	6.5	6.1	5.4	4.7	4.4	4.5	5.2	4.8	4.9	5.4	5.2	5.6	6.8	6.9	8.4	8.8	8.4	-0.4
PCP[e,f]	—	—	—	—	7.0	4.4	3.2	2.2	2.6	2.3	2.9	2.4	1.3	1.2	2.4	1.2	1.4	1.4	1.4	1.6	1.8	2.6	2.3	-0.3
MDMA (Ecstasy)[e]	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	4.6	4.0	-0.6
Cocaine	5.6	6.0	7.2	9.0	12.0	12.3	12.4	11.5	11.4	11.6	13.1	12.7	10.3	7.9	6.5	5.3	3.5	3.1	3.3	3.6	4.0	4.9	5.5	+0.6
Crack[h]	—	—	—	—	—	—	—	—	—	—	—	4.1	3.9	3.1	3.1	1.9	1.5	1.5	1.5	1.9	2.1	2.1	2.4	+0.3
Other Cocaine[i]	—	—	—	—	—	—	—	—	—	—	—	—	9.8	7.4	5.2	4.6	3.2	2.6	2.9	3.0	3.4	4.2	5.0	+0.8
Heroin[j]	1.0	0.8	0.8	0.8	0.5	0.5	0.5	0.6	0.6	0.5	0.6	0.5	0.5	0.5	0.6	0.5	0.4	0.6	0.5	0.6	1.1	1.0	1.2	+0.2
Other Opiates[k]	5.7	5.7	6.4	6.0	6.2	6.3	5.9	5.3	5.1	5.2	5.9	5.2	5.3	4.6	4.4	4.5	3.5	3.3	3.6	3.8	4.7	5.4	6.2	+0.8s
Stimulants[k,l]	16.2	15.8	16.3	17.1	18.3	20.8	26.0	20.3	17.9	17.7	15.8	13.4	12.2	10.9	10.8	9.1	8.2	7.1	8.4	9.4	9.3	9.5	10.2	+0.7
Crystal Meth. (Ice)[l]	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.3	1.4	1.3	1.7	1.8	2.4	2.8	2.3	-0.5
Sedatives[k,m]	11.7	10.7	10.8	9.9	9.9	10.3	10.5	9.1	7.9	6.6	5.8	5.2	4.1	3.7	3.7	3.6	3.6	2.9	3.4	4.2	4.9	5.3	5.4	+0.1
Barbiturates[k]	10.7	9.6	9.3	8.1	7.5	6.8	6.6	5.5	5.2	4.9	4.6	4.2	3.6	3.2	3.3	3.4	3.4	2.8	3.4	4.1	4.7	4.9	5.1	+0.2
Methaqualone[k,m]	5.1	4.7	5.2	4.9	5.9	7.2	7.6	6.8	5.4	3.8	2.8	2.1	1.5	1.3	1.3	0.7	0.5	0.6	0.2	0.8	0.7	1.1	1.0	-0.1
Tranquilizers[k]	10.6	10.3	10.8	9.9	9.6	8.7	8.0	7.0	6.9	6.1	6.1	5.8	5.5	4.8	3.8	3.5	3.6	2.8	3.5	3.7	4.4	4.6	4.7	+0.1
Alcohol[n]	84.8	85.7	87.0	87.7	88.1	87.9	87.0	86.8	87.3	86.0	85.6	84.5	85.7	85.3	82.7	80.6	77.7	76.8	76.0	—	—	—	—	—
																			72.7	73.0	73.7	72.5	74.8	+2.3s
Been Drunk[l]	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	52.7	50.3	49.6	51.7	52.5	51.9	53.2	+1.3
Cigarettes	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Smokeless Tobacco[e,o]	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Steroids[l]	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.9	1.7	1.4	1.1	1.2	1.3	1.5	1.4	1.4	0.0

NOTES: Level of significance of difference between the two most recent classes: s = .05, ss = .01, sss = .001. '—' indicates data not available. See Table 5-1 for relevant footnotes.
SOURCE: The Monitoring the Future Study, the University of Michigan.

TABLE 5-3

Long-Term Trends in Thirty-Day Prevalence of Use of Various Drugs for Twelfth Graders

	Percent who used in last thirty days																							
	Class of 1975	Class of 1976	Class of 1977	Class of 1978	Class of 1979	Class of 1980	Class of 1981	Class of 1982	Class of 1983	Class of 1984	Class of 1985	Class of 1986	Class of 1987	Class of 1988	Class of 1989	Class of 1990	Class of 1991	Class of 1992	Class of 1993	Class of 1994	Class of 1995	Class of 1996	Class of 1997	'96–'97 change
Approx. N =	*9400*	*15400*	*17100*	*17800*	*15500*	*15900*	*17500*	*17700*	*16300*	*15900*	*16000*	*15200*	*16300*	*16300*	*16700*	*15200*	*15000*	*15800*	*16300*	*15400*	*15400*	*14300*	*15400*	
Any Illicit Drug[a,b]	30.7	34.2	37.6	38.9	38.9	37.2	36.9	32.5	30.5	29.2	29.7	27.1	24.7	21.3	19.7	17.2	16.4	14.4	18.3	21.9	23.8	24.6	26.2	+1.6
Any Illicit Drug Other Than Marijuana[a,b]	15.4	13.9	15.2	15.1	16.8	18.4	21.7	17.0	15.4	15.1	14.9	13.2	11.6	10.0	9.1	8.0	7.1	6.3	7.9	8.8	10.0	9.5	10.7	+1.2
Marijuana/Hashish	27.1	32.2	35.4	37.1	36.5	33.7	31.6	28.5	27.0	25.2	25.7	23.4	21.0	18.0	16.7	14.0	13.8	11.9	15.5	19.0	21.2	21.9	23.7	+1.8
Inhalants[c]	—	0.9	1.3	1.5	1.7	1.4	1.5	1.5	1.7	1.9	2.2	2.5	2.8	2.6	2.3	2.7	2.4	2.3	2.5	2.7	3.2	2.5	2.5	0.0
Inhalants, Adjusted[c,d]	—	—	—	—	3.2	2.7	2.5	2.5	2.5	2.6	3.0	3.2	3.5	3.0	2.7	2.9	2.6	2.5	2.8	2.9	3.5	2.9	2.9	0.0
Amyl/Butyl Nitrites[e,f]	—	—	—	—	2.4	1.8	1.4	1.1	1.4	1.4	1.6	1.3	1.3	0.6	0.6	0.6	0.4	0.3	0.6	0.4	0.4	0.7	0.7	0.0
Hallucinogens	4.7	3.4	4.1	3.9	4.0	3.7	3.7	3.4	2.8	2.6	2.5	2.5	2.5	2.2	2.2	2.2	2.2	2.1	2.7	3.1	4.4	3.5	3.9	+0.4
Hallucinogens, Adjusted[g]	—	—	—	—	5.3	4.4	4.5	4.1	3.5	3.2	3.8	3.5	2.8	2.3	2.9	2.3	2.4	2.3	3.3	3.2	4.6	3.8	4.1	+0.3
LSD	2.3	1.9	2.1	2.1	2.4	2.3	2.5	2.4	1.9	1.5	1.6	1.7	1.8	1.8	1.8	1.9	1.9	2.0	2.4	2.6	4.0	2.5	3.1	+0.6s
PCP[e,f]	—	—	—	—	2.4	1.4	1.4	1.0	1.3	1.0	1.6	1.3	0.6	0.3	1.4	0.4	0.5	0.6	1.0	0.7	0.6	1.3	0.7	-0.6
MDMA (Ecstasy)[e]	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	2.0	1.6	-0.4
Cocaine	1.9	2.0	2.9	3.9	5.7	5.2	5.8	5.0	4.9	5.8	6.7	6.2	4.3	3.4	2.8	1.9	1.4	1.3	1.3	1.5	1.8	2.0	2.3	+0.3
Crack[h]	—	—	—	—	—	—	—	—	—	—	—	—	1.3	1.6	1.4	0.7	0.7	0.6	0.7	0.8	1.0	1.0	0.9	-0.1
Other Cocaine[i]	—	—	—	—	—	—	—	—	—	—	—	—	4.1	3.2	1.9	1.7	1.2	1.0	1.2	1.3	1.3	1.6	2.0	+0.4
Heroin[j]	0.4	0.2	0.3	0.3	0.2	0.2	0.2	0.2	0.2	0.3	0.3	0.2	0.2	0.2	0.3	0.2	0.2	0.3	0.2	0.3	0.6	0.5	0.5	0.0
Other Opiates[k]	2.1	2.0	2.8	2.1	2.4	2.4	2.1	1.8	1.8	1.8	2.3	2.0	1.8	1.6	1.6	1.5	1.1	1.2	1.3	1.5	1.8	2.0	2.3	+0.3
Stimulants[k,k]	8.5	7.7	8.8	8.7	9.9	12.1	15.8	10.7	8.9	8.3	6.8	5.5	5.2	4.6	4.2	3.7	3.2	2.8	3.7	4.0	4.0	4.1	4.8	+0.7s
Crystal Meth. (Ice)[j]	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.6	0.6	0.5	0.6	0.7	1.1	1.1	0.8	-0.3
Sedatives[k,m]	5.4	4.5	5.1	4.2	4.4	4.8	4.6	3.4	3.0	2.3	2.4	2.2	1.7	1.4	1.6	1.4	1.5	1.2	1.3	1.8	2.3	2.3	2.1	-0.2
Barbiturates[k]	4.7	3.9	4.3	3.2	3.2	2.9	2.6	2.0	2.1	1.7	2.0	1.8	1.4	1.2	1.4	1.3	1.4	1.1	1.3	1.7	2.2	2.1	2.1	0.0
Methaqualone[k,m]	2.1	1.6	2.3	1.9	2.3	3.3	3.1	2.4	1.8	1.1	1.0	0.8	0.6	0.5	0.6	0.2	0.2	0.4	0.1	0.4	0.4	0.6	0.3	-0.3
Tranquilizers[k]	4.1	4.0	4.6	3.4	3.7	3.1	2.7	2.4	2.5	2.1	2.1	2.1	2.0	1.5	1.3	1.2	1.4	1.0	1.2	1.4	1.8	2.0	1.8	-0.2
Alcohol[n]	68.2	68.3	71.2	72.1	71.8	72.0	70.7	69.7	69.4	67.2	65.9	65.3	66.4	63.9	60.0	57.1	54.0	51.3	51.0	—	—	—	—	—
																			48.6	50.1	51.3	50.8	52.7	+1.9
Been Drunk[l]	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	31.6	29.9	28.9	30.8	33.2	31.3	34.2	+2.9
Cigarettes	36.7	38.8	38.4	36.7	34.4	30.5	29.4	30.0	30.3	29.3	30.1	29.6	29.4	28.7	28.6	29.4	28.3	27.8	29.9	31.2	33.5	34.0	36.5	+2.5s
Smokeless Tobacco[e,e]	—	—	—	—	—	—	—	—	—	—	—	11.5	11.3	10.3	8.4	—	—	11.4	10.7	11.1	12.2	9.8	9.7	-0.1
Steroids[j]	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.8	1.0	0.8	0.6	0.7	0.9	0.7	0.7	1.0	+0.3

NOTES: Level of significance of difference between the two most recent classes: s = .05, ss = .01, sss = .001. '—' indicates data not available. See Table 5-1 for relevant footnotes.
SOURCE: The Monitoring the Future Study, the University of Michigan

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TABLE 5-4

Long-Term Trends in Thirty-Day Prevalence of Daily Use of Various Drugs for Twelfth Graders

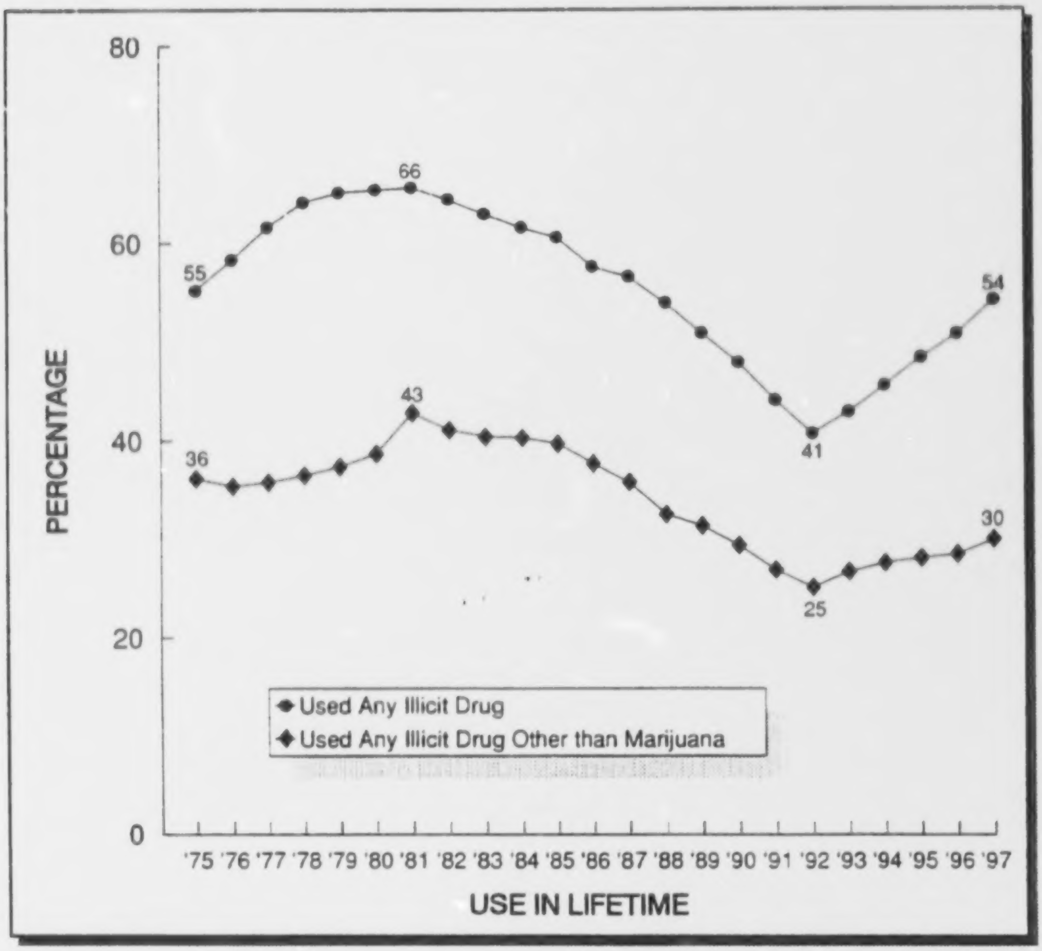
	Percent who used daily in last thirty days																							
	Class of 1975	Class of 1976	Class of 1977	Class of 1978	Class of 1979	Class of 1980	Class of 1981	Class of 1982	Class of 1983	Class of 1984	Class of 1985	Class of 1986	Class of 1987	Class of 1988	Class of 1989	Class of 1990	Class of 1991	Class of 1992	Class of 1993	Class of 1994	Class of 1995	Class of 1996	Class of 1997	'96–'97 change
Approx. N =	*9400*	*15400*	*17100*	*17800*	*15500*	*15900*	*17500*	*17700*	*16300*	*15900*	*16000*	*15200*	*16300*	*16300*	*16700*	*15200*	*15000*	*15800*	*16300*	*15400*	*15400*	*14300*	*15400*	
Marijuana/Hashish	6.0	8.2	9.1	10.7	10.3	9.1	7.0	6.3	5.5	5.0	4.9	4.0	3.3	2.7	2.9	2.2	2.0	1.9	2.4	3.6	4.6	4.9	5.8	+0.9s
Inhalants[c]	—	*	*	0.1	*	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.1	0.2	0.2	0.3	0.2	0.1	0.1	0.1	0.1	0.2	0.1	-0.1
Inhalants, Adjusted[c,d]	—	—	—	—	0.1	0.2	0.2	0.2	0.2	0.2	0.4	0.4	0.4	0.3	0.3	0.3	0.5	0.2	0.2	—	—	0.4	0.2	-0.3s
Amyl/Butyl Nitrites[e,f]	—	—	—	—	*	0.1	0.1	0.0	0.2	0.1	0.3	0.5	0.3	0.1	0.3	0.1	0.2	0.1	0.1	0.2	0.2	0.4	0.1	-0.3s
Hallucinogens	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	*	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.3	+0.1s
Hallucinogens, Adjusted[g]	—	—	—	—	0.2	0.2	0.1	0.2	0.2	0.2	0.3	0.3	0.2	*	0.3	0.3	0.1	0.1	0.1	—	—	0.4	0.4	-0.1
LSD	*	*	*	*	*	*	0.1	*	0.1	0.1	0.1	*	0.1	*	*	0.1	0.1	0.1	0.1	0.1	0.1	*	0.2	+0.1s
PCP[e,f]	—	—	—	—	0.1	0.1	0.1	0.1	0.1	0.1	0.3	0.2	0.3	0.1	0.2	0.1	0.1	0.1	0.1	0.3	0.3	0.3	0.1	-0.2
MDMA (Ecstasy)[e]	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.0	0.1	+0.1
Cocaine	0.1	0.1	0.1	0.1	0.2	0.2	0.3	0.2	0.2	0.2	0.4	0.4	0.3	0.2	0.3	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2	-0.1
Crack[h]	—	—	—	—	—	—	—	—	—	—	—	—	0.1	0.1	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.1	0.0
Other Cocaine[i]	—	—	—	—	—	—	—	—	—	—	—	—	0.2	0.2	0.1	0.1	0.1	*	0.1	0.1	0.1	0.1	0.1	-0.1
Heroin[j]	0.1	*	*	*	*	*	*	*	0.1	*	*	*	*	*	0.1	*	*	*	*	*	0.1	0.1	0.1	-0.1
Other Opiates[k]	0.1	0.1	0.2	0.1	*	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.1	0.1	*	*	0.1	0.1	0.2	0.2	0.0
Stimulants[b,k]	0.5	0.4	0.5	0.5	0.6	0.7	1.2	0.7	0.8	0.6	0.4	0.3	0.3	0.3	0.3	0.2	0.2	0.2	0.2	0.2	0.3	0.3	0.3	0.0
Crystal Meth. (Ice)[l]	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.1	0.1	0.1	0.1	*	0.1	0.1	0.1	0.0
Sedatives[k,m]	0.3	0.2	0.2	0.2	0.1	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	*	0.1	0.1	0.1	0.0
Barbiturates[k]	0.1	0.1	0.2	0.1	*	0.1	0.1	0.1	0.1	*	0.1	0.1	0.1	*	0.1	0.1	0.1	*	0.1	*	0.1	0.1	0.1	0.0
Methaqualone[k,m]	*	*	*	*	*	0.1	0.1	0.1	*	*	*	*	*	0.1	*	*	*	0.1	0.0	0.1	0.1	0.0	0.1	+0.1
Tranquilizers[k]	0.1	0.2	0.3	0.1	0.1	0.1	0.1	0.1	0.1	0.1	*	*	0.1	*	0.1	0.1	0.1	*	*	0.1	*	0.2	0.1	-0.1s
Alcohol																								
Daily[n]	5.7	5.6	6.1	5.7	6.9	6.0	6.0	5.7	5.5	4.8	5.0	4.8	4.8	4.2	4.2	3.7	3.6	3.4	2.5	—	—	—	—	—
																			3.4	2.9	3.5	3.7	3.9	+0.2
Been drunk daily[l]	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.9	0.8	0.9	1.2	1.3	1.6	2.0	+0.4
5+ drinks in a row in last 2 weeks	36.8	37.1	39.4	40.3	41.2	41.2	41.4	40.5	40.8	38.7	36.7	36.8	37.5	34.7	33.0	32.2	29.8	27.9	27.5	28.2	29.8	30.2	31.3	+1.1
Cigarettes																								
Daily	26.9	28.8	28.8	27.5	25.4	21.3	20.3	21.1	21.2	18.7	19.5	18.7	18.7	18.1	18.9	19.1	18.5	17.2	19.0	19.4	21.6	22.2	24.6	+2.4s
Half-pack or more per day	17.9	19.2	19.4	18.8	16.5	14.3	13.5	14.2	13.8	12.3	12.5	11.4	11.4	10.6	11.2	11.3	10.7	10.0	10.9	11.2	12.4	13.0	14.3	+1.3
Smokeless Tobacco[e,o]	—	—	—	—	—	—	—	—	—	—	—	4.7	5.1	4.3	3.3	—	—	4.3	3.3	3.9	3.6	3.3	4.4	+1.0
Steroids[l]	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.1	0.2	0.1	0.1	0.1	0.4	0.2	0.3	0.3	0.0

NOTES: Level of significance of difference between the two most recent classes: s = .05, ss = .01, sss = .001. '—' indicates data not available. '*' indicates less than .05 percent.
Any apparent inconsistency between the change estimate and the prevalence estimates for the two most recent classes is due to rounding error.
See Table 5-1 for relevant footnotes.
Daily use is defined as use on twenty or more occasions in the past thirty days except for 5+ drinks, cigarettes, and smokeless tobacco, for which actual daily use is measured.

SOURCE: The Monitoring the Future Study, the University of Michigan.

FIGURE 5-1

Trends in Lifetime Prevalence of an Illicit Drug Use Index for Twelfth Graders



NOTES: Use of "any illicit drugs" includes any use of marijuana, LSD, other hallucinogens, crack, other cocaine, or heroin, or any use which is not under a doctor's orders of other opiates, stimulants, barbiturates, methaqualone (excluded since 1990), or tranquilizers.

Beginning in 1982 the question about stimulant use (i.e., amphetamines) was revised to get respondents to exclude the inappropriate reporting of non-prescription stimulants. The prevalence rate dropped slightly as a result of this methodological change.

Important changes in the attitudes and beliefs that young people hold in relation to marijuana have also occurred over this period, and these changes can account for much of the long-term decline in use, as well as the recent turnaround in use. (See Chapter 8 for a thorough discussion of the issue.)

- Of particular importance were the even sharper fluctuations that have occurred for active ***daily marijuana use*** (Table 5-4). Between 1975 and 1978 there was an almost two-fold increase in daily use. The proportion reporting daily use in the class of 1975 (6%) came as a surprise to many; and then that proportion rose rapidly, so that by 1978 one in every nine high school seniors (11%) indicated that he or she used the drug on a daily or nearly daily basis (defined as use on 20 or more occasions in the last 30 days). In 1979 this rapid and troublesome increase halted, followed by a rapid reversal. By 1992 the daily usage rate had dropped to 1.9%, well below the peak rate of 11% or even the 6% level first observed in 1975. We attribute much of this dramatic decline to a very substantial increase in concerns about possible adverse effects from regular use, and to a growing perception that peers would disapprove of marijuana use, particularly regular use. In 1993, for the first time in fifteen years, daily marijuana use increased significantly, and it has increased significantly every year since, reaching 5.8% in 1997—three times the rate in 1992. (See Chapter 10 for an expanded discussion of daily marijuana use among high school seniors.)

- Until 1978, the proportion of seniors involved in ***any illicit drug use*** increased steadily, primarily because of the increase in marijuana use (see Figures 5-1 to 5-3). About 54% of the classes of 1978 and 1979 reported taking at least one illicit drug during the prior year, up from our first observation of 45% in the class of 1975. Between 1979 and 1984, however, the proportion who reported using any illicit drug during the prior year dropped by 1% or 2% annually until 1985, when there was a brief pause in the decline. In 1986 the decline resumed, with annual prevalence dropping significantly to 27% by 1992, exactly half that in 1979. As with marijuana, the annual prevalence rate has increased since 1992, to 42% in 1997.

- As Table 5-1 and Figure 5-1 illustrate, between 1976 and 1981 there was a very gradual, steady increase in the proportion of twelfth graders using ***some illicit drug other than marijuana***.[27] The annual prevalence of such behaviors (Table 5-2 and Figure 5-2), which rose by 9 percentage points between 1976 and 1981 (from 25% to 34%), began a steady declineto 15% in 1992. Since 1992, annual prevalence has been rising again, to 21% in 1997. The 30-day prevalence figure exhibited the largest

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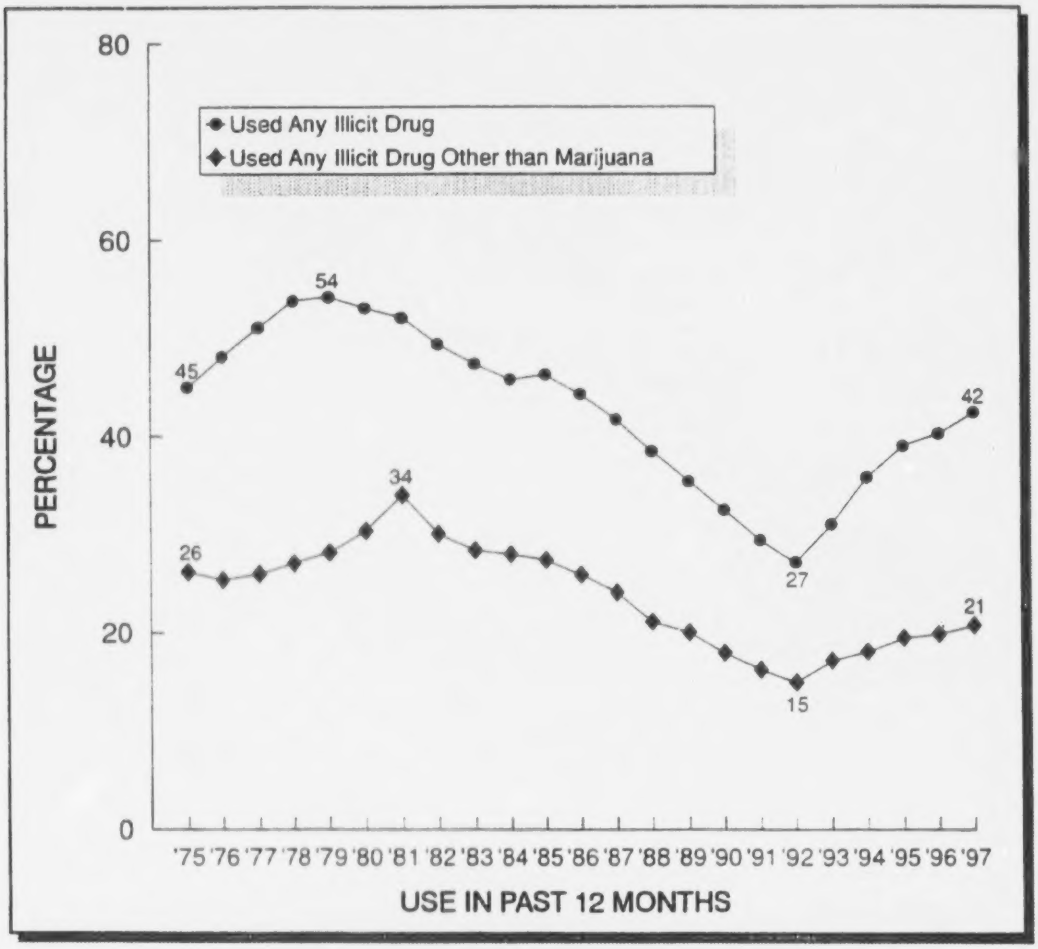
[27] Included under the definition of "any illicit drug other than marijuana" is any use of LSD, other hallucinogens, crack, other cocaine, heroin, and/or any use that is not under a doctor's orders of other opiates, stimulants, barbiturates, methaqualone (excluded since 1990), or tranquilizers. Not included are the following: alcohol, tobacco, and inhalants. Nitrites, PCP, steroids, and ice are included only to the extent that respondents included their use in the more general questions asking about inhalants, hallucinogens, or amphetamines, respectively.

FIGURE 5-2

Trends in Annual Prevalence of an Illicit Drug Use Index for Twelfth Graders



NOTES: Use of "any illicit drugs" includes any use of marijuana, LSD, other hallucinogens, crack or other cocaine, or heroin, or any use which is not under a doctor's orders of other opiates, stimulants, barbiturates, methaqualone (excluded since 1990), or tranquilizers.

Beginning in 1982 the question about stimulant use (i.e., amphetamines) was revised to get respondents to exclude the inappropriate reporting of non-prescription stimulants. The prevalence rate dropped slightly as a result of this methodological change.

proportional drop, from 22% in 1981 to 6% in 1992 (see Table 5-3 and Figure 5-3). In 1993, both annual and 30-day prevalence rates showed some increases, indicating that the turnaround in 1993 was not confined to marijuana use. Annual prevalence rose from 15% in 1992 to 17% in 1993. In 1994 through 1997, only slight increases (nonsignificant) were seen in this measure. When compared to the large increases seen in the any illicit use index, it is apparent that the increase in the use of illicit drugs other than marijuana taken as a whole was not as sharp in either absolute or proportional terms as the increase in marijuana use.

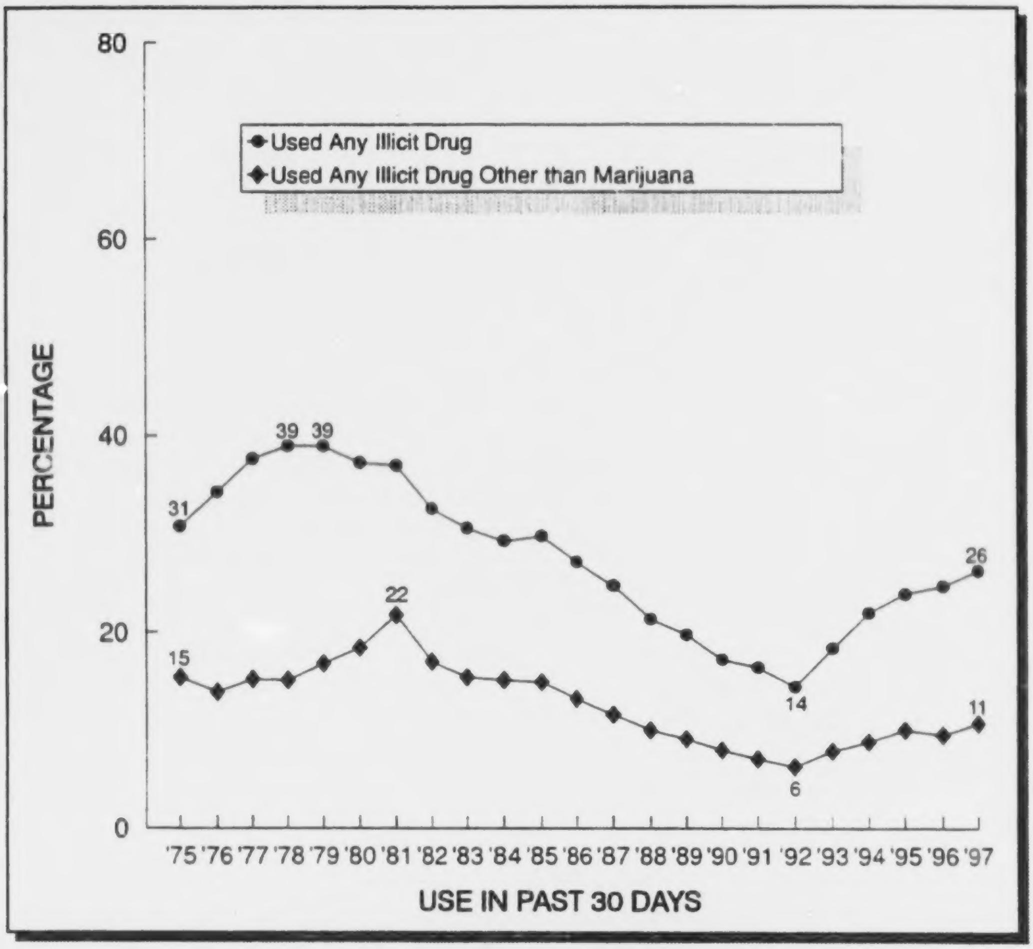
Most of the earlier rise in the use of some ***illicit drug other than marijuana*** appeared to be due to the increasing popularity of cocaine with this age group between 1976 and 1979, and then to the increasing use of stimulants between 1979 and 1981. As stated earlier in this volume, we believe that the upward shift in stimulant use was exaggerated because some respondents included instances of using over-the-counter stimulants in their reports of amphetamine use. Figures 5-1 through 5-3 show trends that, beginning in 1982, were revised to exclude the inappropriate reporting of these nonprescription stimulants.

- Although the overall proportion using ***illicit drugs other than marijuana*** has changed gradually and steadily over the years, much greater fluctuations have occurred for specific drugs within this general class. This is important to recognize, because it shows that while the proportion willing to try any illicit drug may put outer limits on the amplitude of fluctuations for any one of them, the various subclasses of drugs must have important determinants specific to them—variables such as perceived risks, peer normative attitudes, assumed benefits, and availability. Such variables will be discussed in Chapters 8 and 9. (See Tables 5-1 through 5-3 for the long-term trends in twelfth graders' lifetime, annual, and monthly prevalence for each class of drugs. Figures 5-4a through 5-4i graph these trends for annual prevalence, along with the trends for eighth and tenth graders.)

- From 1976 to 1979, ***cocaine*** (Figure 5-4e) exhibited a substantial increase in popularity, with annual prevalence doubling in just three years from 6% in the class of 1976 to 12% in the class of 1979. Nationally there was little or no change in any of the cocaine prevalence statistics for seniors between 1979 and 1984. (Subgroup differences in trends are discussed below.) In 1985, we reported statistically significant increases in annual and monthly use, then a leveling again in 1986. After 1986, however, both indicators of use decreased by three-quarters or more: annual use decreased from 12.7% in 1986 to 3.1% in 1992; monthly use decreased from 6.2% to 1.3% over the same period. (Reasons for this decrease are discussed in the chapter on attitudes and beliefs.) Since 1992, annual prevalence has risen significantly from 3.1% to 5.5% in 1997 and 30-day prevalence has risen modestly from 1.3% to 2.3%.

FIGURE 5-3

Trends in Thirty-Day Prevalence of an Illicit Drug Use Index for Twelfth Graders



NOTES: Use of "any illicit drugs" includes any use of marijuana, LSD, other hallucinogens, crack, other cocaine, or heroin, or any use which is not under a doctor's orders of other opiates, stimulants, barbiturates, methaqualone (excluded since 1990), or tranquilizers.

Beginning in 1982 the question about stimulant use (i.e., amphetamines) was revised to get respondents to exclude the inappropriate reporting of non-prescription stimulants. The prevalence rate dropped slightly as a result of this methodological change.

- Use of ***crack cocaine*** was first measured in 1986 by a single question contained in one questionnaire form and asked only of those respondents who had reported any use of cocaine in the past 12 months. It simply asked if crack was one of the forms of cocaine they had used. It was thus an estimate of the annual prevalence of crack use.

  However, prior to 1986, other indicators gathered routinely in the study showed some indirect evidence of the rapid spread of crack. For example, we found that the proportion of all seniors reporting that they smoked cocaine (as well as having used in the past year) more than doubled between 1983 and 1986, from 2.4% to 5.7%. In the same period, the proportion of all seniors who said that they had both used cocaine during the prior year *and* at some time been unable to stop using it when they tried to stop doubled (from 0.4% to 0.8%). In addition, between 1984 and 1986 the proportion of seniors reporting active daily use of cocaine doubled (from 0.2% to 0.4%). We think it likely that the advent of crack use during this period contributed substantially to these changes.

- In 1987 questions about crack use were introduced into two questionnaire forms using our standard set of three questions that ask separately about frequency of use in lifetime, past 12 months, and past 30 days. These were added subsequently to all questionnaire forms beginning in 1990.

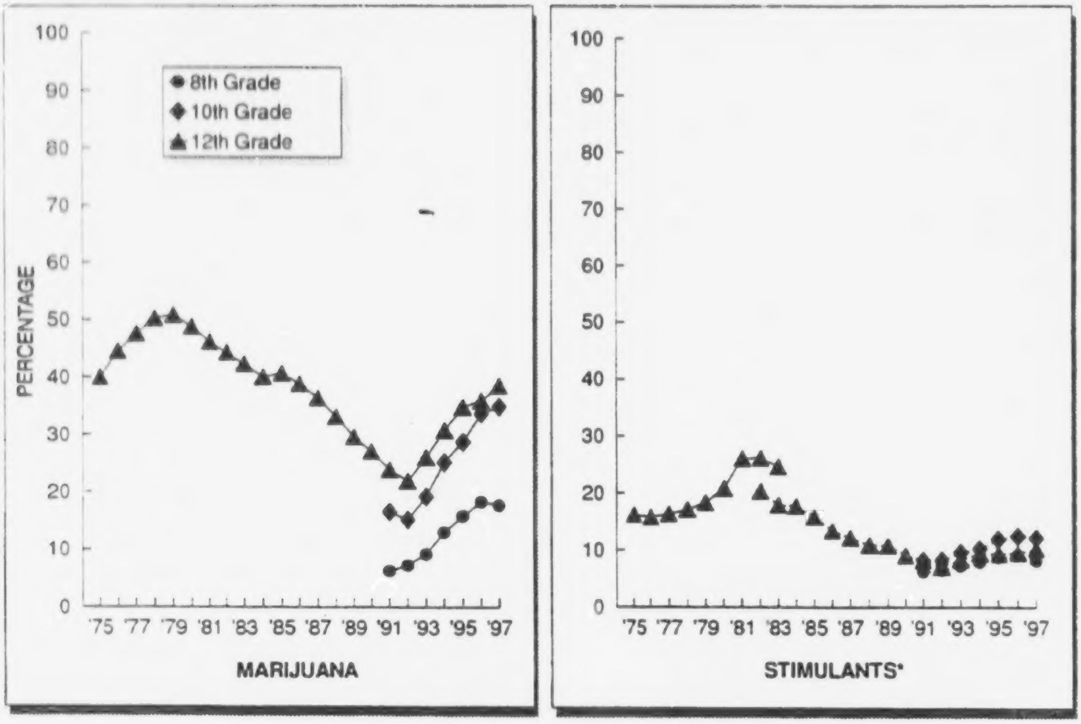
  Between 1986 and 1991, annual ***crack*** prevalence declined from 4.1% to 1.5%, or by about 60% (see Figure 5-4e). Lifetime prevalence rates were 5.4% in 1987 (the first year this measure was available) and were down by half to a low of 2.6% by 1992. The figures for 30-day prevalence dropped from 1.3% in 1987 to 0.7% in 1990; then for several years rates remained relatively stable, before starting to inch up again in 1994. Since 1993, annual prevalence has risen steadily from 1.5% to 2.4% in 1997.

  It is important to note that ***crack*** use may be disproportionately located in the out-of-school population relative to most other drugs. In general, it would seem likely that the trends there would parallel those seen among high school seniors, who represent the majority of the population the same age, but there could be exceptions.

- Like cocaine use, ***inhalant*** use rose steadily, but more slowly, in the late 1970s (see Figure 5-4b). Annual prevalence (unadjusted) rose from 3.0% in 1976 and peaked at 5.4% in 1979. Starting in 1979, when separate questions were introduced to measure the rising use of nitrite inhalants, an adjustment was introduced into the overall inhalant use measure to correct for the under- reporting of nitrite inhalants, which we determined existed. Between 1979 and 1983, there was some overall decline in this adjusted version—in part due to a substantial drop in the use of ***amyl and butyl nitrites,*** for which annual prevalence declined from 6.5% in 1979 to 3.6% in 1983. Both the adjusted and unadjusted measures increased modestly between 1983 and 1986, with annual use of inhalants

FIGURE 5-4a

Trends in Annual Prevalence of Various Drugs for Eighth, Tenth, and Twelfth Graders



*The dotted lines connect percentages which result if non-prescription stimulants are excluded.

(adjusted) increasing from 6.2% in 1983 to 8.9% in 1986 and that of nitrites increasing less, from 3.6% to 4.7%.

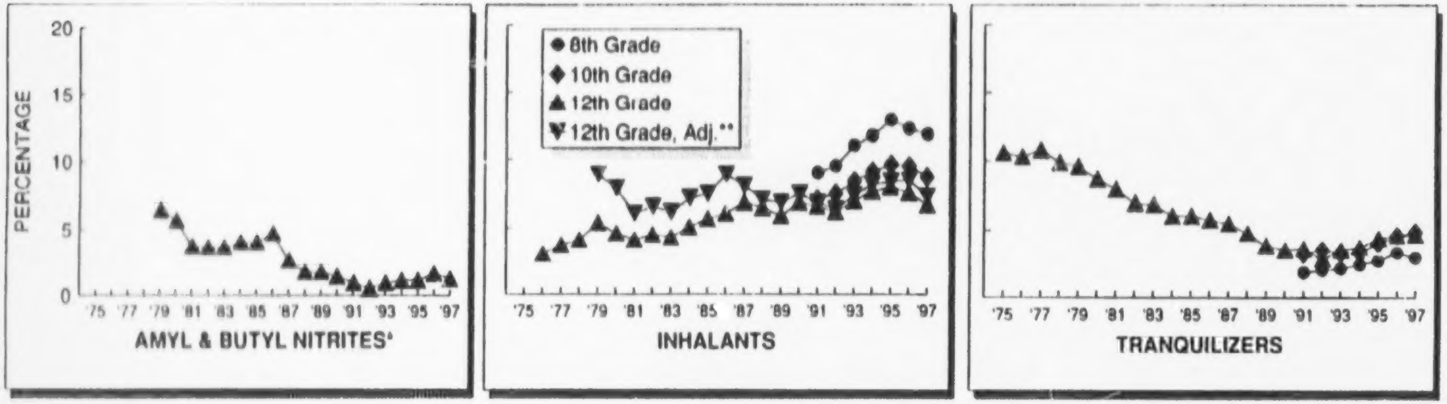
After 1986, there was a steep decline in annual ***nitrite*** use (from 4.7% to 0.5% in 1992) but only a modest decline in overall inhalant use (adjusted), with annual prevalence falling from 8.9% in 1986 to 6.4% in 1992, before rising again to 8.5% by 1996. The gradual convergence of the unadjusted and adjusted inhalant prevalence rates, seen in Figure 5-4b, suggests that the number of seniors who used nitrites, but did not report themselves as inhalant users on the general inhalant use question, diminished considerably by 1992, as would be expected in light of the overall decline in nitrite use. Since 1992, however, the annual prevalence of nitrite use had been steadily rising, from 0.5% to 1.6% in 1996—a large proportional change, but on a very low base. In 1997 the rise in usage rates halted.

This unusual pattern of change, where inhalant use unadjusted for nitrites rose sharply over much of the life of the study while the version adjusted for nitrites stayed fairly level over most of the life of the study (Figure 5-4b), is worth further consideration. Essentially, ***inhalants other than nitrites*** rose in use, but after 1979 the increase was largely offset or masked in the adjusted inhalants measure by the sharp decline in the use of nitrites. In the class of 1976, when the inhalant questions were first introduced, 10.3% indicated any lifetime use (unadjusted), (vs. 17.4% in 1995—a substantial increase). Annual prevalence (unadjusted) more than doubled over the same interval, from 3.0% to 8.0%. Since 1995, however, no further increase has been observed in inhalant use—indeed, a clear decline occurred in 1997.

- ***Stimulant*** (amphetamine) use remained relatively unchanged between 1975 and 1978 and then increased sharply between 1979 and 1981 (Figure 5-4a). Between 1976 and 1981, reported annual prevalence rose by 10 percentage points (from 16% to 26%) and daily use tripled, from 0.4% to 1.2%. As stated earlier, we think these increases were somewhat exaggerated in the 1980 and 1981 surveys, in particular, by respondents who included nonamphetamine over-the-counter diet and stay-awake pills, as well as "look-alike" and "sound-alike" pills in their answers. In 1982, we added new versions of the questions on amphetamine use, which were more explicit in instructing respondents not to include such nonprescription pills. (These were added to only three of the five forms of the questionnaire being used; the amphetamine questions were left unchanged in the other two forms until 1984.) Between 1981 and 1982, prevalence rates dropped slightly as a result of this methodological change. In all tables and figures, data for 1975 through 1981 are based on the unchanged questions, providing comparable data across time for longer-term trend estimates; data for 1982 through 1997 are based on the

FIGURE 5-4b

Trends in Annual Prevalence of Various Drugs for Eighth, Tenth, and Twelfth Graders



*8th and 10th graders are not asked about nitrite use.

**Adjusted for underreporting of amyl and butyl nitrites.

revised questions, providing our best assessments of current prevalence and recent trends in true amphetamine use.[28]

In 1982 and 1983, the two years for which both adjusted and unadjusted statistics are available, the unadjusted data showed a modest amount of over-reporting (see Figure 5-4a). Both statistics suggest that a downturn in the current use of stimulants began in 1982 and continued for a decade. For example, between 1982 and 1992 the annual prevalence for amphetamines (revised) fell by nearly two-thirds from 20% to 7%. Current use and current daily use both fell by more than two-thirds. As with a number of other drugs, the trend lines veered upwards after 1992. Annual prevalence rose significantly from 7.1% in 1992 to 10.2% by 1997.

- In 1990, questions were added about twelfth graders' use of ***ice***, a crystallized form of methamphetamine that can be smoked much like crack. Despite the widespread concern at the time that an epidemic of ice use would develop, it has not made much of an inroad into the national population of seniors, quite possibly because the dangerous reputation of crack rubbed off on it. Annual prevalence held at about 1.3% from 1990, the first measurement point, through 1992, and then, use began to rise gradually to 2.8% by 1996. This more than doubling gave it a slightly higher prevalence rate than crack had (2.1%) in 1996. A decline in ice use of 0.5% in 1997 (nonsignificant) brought them to equivalent levels of use.

- The sustained, gradual decline in ***sedative*** use (Figure 5-4c) between 1975 and 1979 halted in 1980 and 1981. Annual prevalence, which dropped steadily from 11.7% in 1975 to 9.9% in 1979, increased slightly to 10.5% by 1981, perhaps reflecting the inclusion of some "look-alike" pills in the reporting. The longer-term decline resumed again in 1982, and over the next decade annual prevalence dropped to 2.9%, a decline of three-quarters from the peak level in 1975. After 1992, an increase began in the annual measure, reaching 5.3% by 1996, before leveling in 1997.

  The overall trends for sedatives mask differential trends occurring for the two components of the measure, as illustrated in Figure 5-4c. ***Barbiturate*** use declined steadily between 1975 and 1987 before leveling off. By 1992, annual prevalence (2.8%) was less than one-third of the 1975 level (10.7%). It then rose back to 5.1% by 1997. ***Methaqualone*** use, on the other hand, rose sharply from 1978 until 1981. In fact, it was the only drug other than stimulants that was still rising in 1981. But in 1982, the use of methaqualone also began to decline, accounting for the overall sedative category resuming its decline that year. Annual use inched up a bit in the 1990s to 1.0% in 1997, but it still stands at a small fraction of its peak level observed in 1981 (7.6%). Because of the very low prevalence rates, methaqualone questions were dropped from five of the

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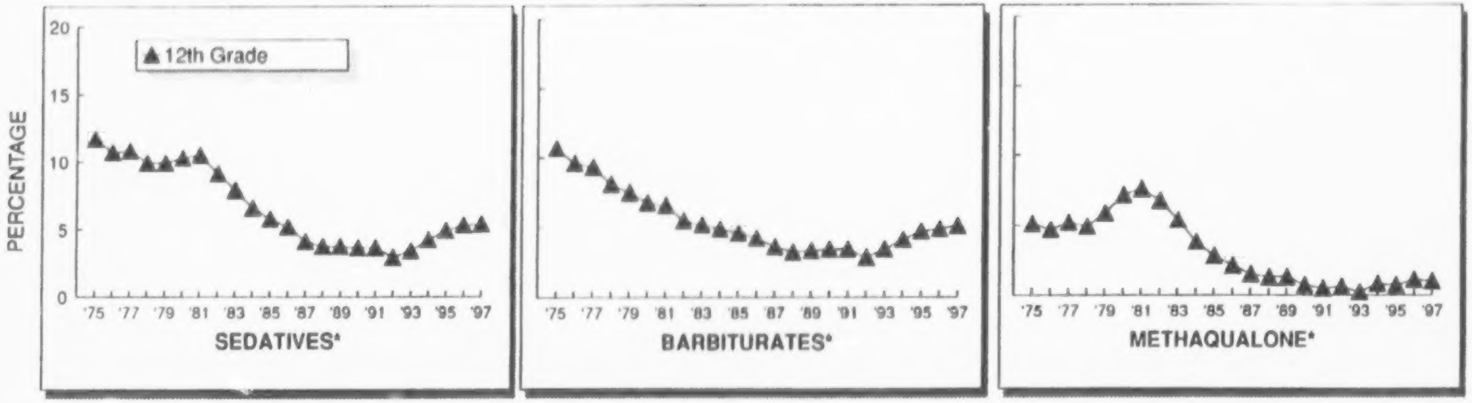
[28] We think the unadjusted estimates for the earliest years of the survey were probably little affected by the improper inclusion of nonprescription stimulants, since sales of the latter did not burgeon until after the 1979 data collection.

FIGURE 5-4c

Trends in Annual Prevalence of Various Drugs for Eighth, Tenth, and Twelfth Graders



*8th and 10th graders are not asked about sedatives, barbiturates, and methaqualone use.

six questionnaire forms beginning in 1990. Therefore, since 1990 the overall sedative data have been based on the six-form barbiturate data adjusted by the one-form methaqualone data.

- Usage statistics for ***tranquilizers*** (Figure 5-4b) peaked in 1977, probably following a considerable period of increase, and then showed a long, steady decline for 15 years, through 1992. Lifetime prevalence dropped by two-thirds (from 18% in 1977 to 6% in 1992), annual prevalence by three-fourths (from 11% to 2.8%), and 30-day prevalence by more than three-fourths (from 4.6% to 1.0%). Following significant declines on all three prevalence measures in 1992, all rates showed an increase in 1993 through 1996 but leveled in 1997.

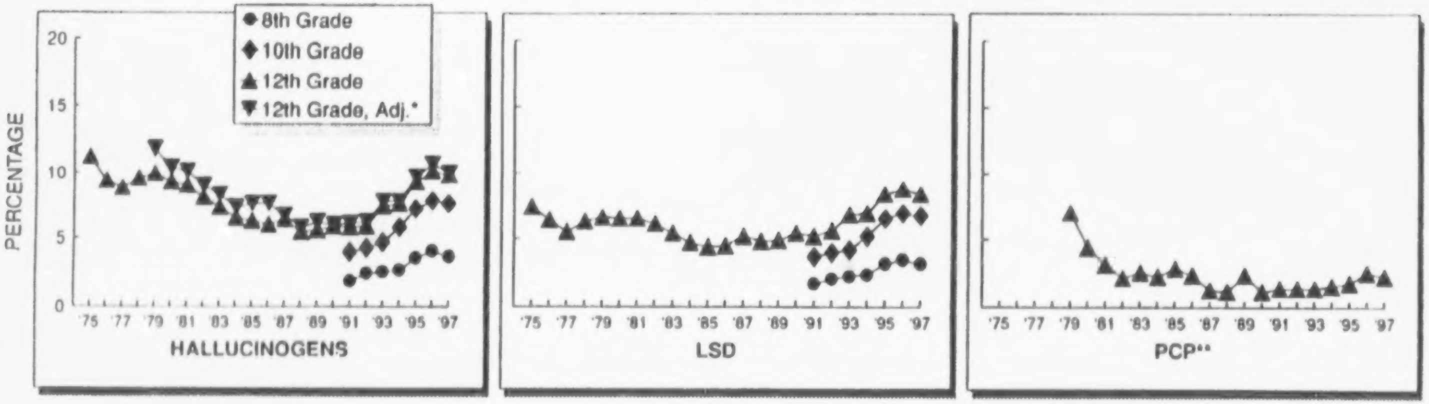
- Between 1975 and 1979, the prevalence of ***heroin*** use dropped rather steadily (Table 5-2 and Figure 5-4f). Lifetime prevalence dropped by exactly half, from 2.2% in 1975 to 1.1% in 1979, and annual prevalence also dropped by half, from 1.0% in 1975 to 0.5% in 1979. This decline halted in 1979 and the statistics remained almost constant for a decade and a half. In 1994, all prevalence rates remained similar to those in 1979, with very little change in the intervening years. However, in 1995 a sharp (and statistically significant) increase occurred, with annual and 30-day prevalence rates roughly doubling, to 1.1% and 0.6%, respectively. (As was discussed in the previous chapter [see also Table 5-6], we believe that the advent of noninjection forms of heroin has played a role in this increase.) However, there was no further increase in annual or 30-day prevalence rates in 1996 or 1997 (Tables 5-2 and 5-3) or in the use of heroin by methods other than injection (Table 5-6).

- For the first 13 years of the study, the use of ***opiates other than heroin*** remained fairly stable, with annual prevalence fluctuating between 5.1% and 6.4% (see Figure 5-4f). After 1987, there was a gradual decline in annual prevalence from 5.3% in 1987 to 3.3% in 1992. Since 1992, use has risen gradually, but steadily, including a significant increase to 6.2% in 1997.

- ***Hallucinogen*** use (unadjusted for under-reporting of PCP) declined some in the mid-1970s (Figure 5-4d) from an annual prevalence of 11.2% in 1975 to 9.6% in 1978. This may well have been the tail end of a longer period of decline precipitated by rising concerns about the adverse effects of hallucinogens—particularly LSD—and especially about possible damage to the brain and to genes. The use of hallucinogens (unadjusted for PCP use) then leveled for several years before beginning another sustained decline. The first hallucinogen figures that were adjusted for the under-reporting of PCP were available in 1979. Between then and 1984, annual prevalence of ***hallucinogens*** (adjusted) declined steadily, dropping from 11.8% to 7.3%. The rate remained fairly level through 1986, dropped a little more through 1988, then remained level again through 1992. In 1993 this pattern of irregular declines ended, as annual

FIGURE 5-4d

Trends in Annual Prevalence of Various Drugs for Eighth, Tenth, and Twelfth Graders



*Adjusted for underreporting of PCP.

**8th and 10th graders are not asked about PCP use.

prevalence rose significantly from 6.2% in 1989 to 10.7% by 1996. In 1997, use dropped slightly to 10.0%.

- ***LSD***, one of the major drugs constituting the hallucinogen class, showed a modest decline from 1975 to 1977, followed by considerable stability through 1981 (Figure 5-4d). Between 1981 and 1985, there was a second period of gradual decline, with annual prevalence falling from 6.5% to 4.4%. However, after 1985, annual prevalence began to rise gradually to 5.6% in 1992. The rate of increase accelerated in 1993, as annual prevalence jumped to 6.8%. The increase continued through 1996, with annual prevalence reaching 8.8%, double the low point in 1985. The increase halted in 1997, however.

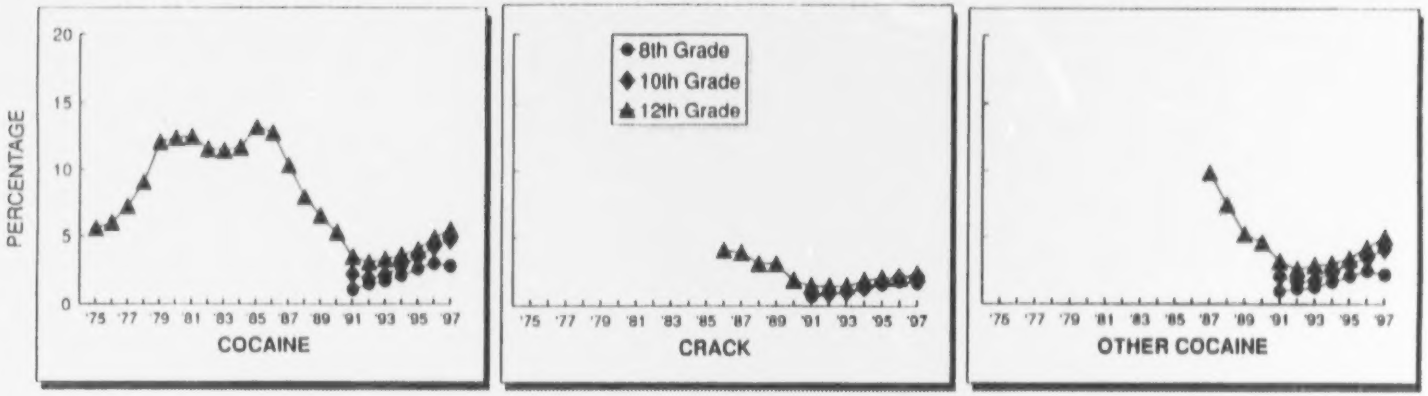
- Prevalence statistics for the specific hallucinogen ***PCP*** showed a very sharp decline after 1979, when the use of this drug was first measured (see Figure 5-4d). Annual prevalence dropped from 7.0% in the class of 1979 to 2.2% in the class of 1982. After leveling for a few years, it dropped further to 1.3% by 1987, which is about where it has remained until 1993. The speed with which this drug fell from popularity strongly suggests that it achieved a reputation as a dangerous drug very quickly. From 1993 to 1996, annual use increased, as did the use of most of the other illicit drugs, to 2.6% by 1996. Also, as with most other drugs, the increase halted in 1997.

- As can be seen from these varied patterns of use, the overall proportion of seniors using ***any illicit drugs other than marijuana*** in their lifetime has changed over the years, but the mix of drugs they used changed even more. A number of drug classes showed dramatic declines (particularly in the 1980s) some showed substantial increases, and some remained fairly stable. Further, the periods in which they either increased or declined varied considerably for the different classes of drugs, although between 1992 and 1996 the use of a good many drugs increased and in 1997 the use of most of them stabilized.

- Turning to the licit drugs, in the last half of the 1970s there was a small upward shift in the prevalence of ***alcohol*** use among seniors (see Figure 5-4g). To illustrate, between 1975 and 1979 the annual prevalence rate rose steadily from 85% to 88%, the monthly from 68% to 72%, and the daily from 5.7% to 6.9%. As with marijuana, 1979 was the peak year for annual use. Between 1979 and 1985 these prevalence rates fell. Annual prevalence fell from 88% to 86%, monthly from 72% to 66%, and daily from 6.9% to 5.0%. All three rates remained fairly level from about 1985 to 1987, after which they showed some further decline. Thirty-day prevalence, for example, fell from 66% in 1987 to 51% in 1993, down by a quarter from its peak level in 1978 (72%). The prevalence of daily alcohol use fell from 4.8% to 3.4% between 1987 and 1992, followed by a sharper drop to 2.5% in 1993, down by more than one-half from its peak level in

FIGURE 5-4e

Trends in Annual Prevalence of Various Drugs for Eighth, Tenth, and Twelfth Graders



COCAINE

CRACK

OTHER COCAINE

1979 (6.9%). No further declines were observed in 1994, however, based on a slightly revised set of alcohol usage questions.[29] If anything, there was evidence of some increase in use, though none of the changes reached statistical significance. From 1993 through 1997, there was a slight upward drift in the annual, 30-day, and daily prevalence rates.

- A similar pattern was observed in the prevalence of ***occasional heavy drinking*** (Table 5-4 and Figure 5-4i). When asked whether they had taken five or more drinks in a row during the prior two weeks, 37% of the seniors in 1975 said they had. This proportion rose gradually to 41% by 1979, where it remained through 1983. In both 1984 and 1985, we observed drops of 2 percentage points in this troublesome statistic, bringing it down to 37%, exactly where it was in 1975. There was no further change in 1986 or 1987, but over the next six years it dropped another 10 percentage points, from 38% in 1987 to 28% in 1993—one-third of its peak level of 41%. Since 1992, it has increased gradually to 31% in 1997.

  Beginning in 1991, respondents were asked to report how often they had ***been drunk*** in their lifetime, in the past 12 months, and in the past 30 days. These measures showed declines between 1991 and 1993, followed by gradual increases through 1997, as would be expected given the data above (Tables 5-1 through 5-4 and Figure 5-4g).

- There is no evidence that the 13-year decline in marijuana use observed between 1979 and 1992 led to any concomitant increase in alcohol use, as many observers suggested would happen. In fact, through 1992 there was some parallel decline in annual, monthly, and daily alcohol use as well as in occasional heavy drinking. Earlier, when marijuana use rose in the late 1970s, alcohol use moved along with it. As marijuana use rose again in the 1990s, alcohol use seemed to be edging up with it, although certainly not as sharply. In sum, there is little evidence here to support what we have termed "the displacement hypothesis," which implies that an increase in alcohol or marijuana use will lead to a decline in the other, or vice versa.

- ***Cigarette use*** among seniors peaked in 1976 and 1977, as measured by lifetime, 30-day, and daily prevalence. (Annual prevalence is not asked.) Over the next four years, 30-day prevalence dropped substantially, from 38% in the class of 1977 to 29% in the class of 1981 (see Tables 5-3 and 5-4 and Figure 5-4h). More importantly, ***daily cigarette use*** dropped over that same interval from 29% to 20%, and daily use of a half-pack or more from 19% to 14%. But 1982 and 1983 the decline had clearly halted. The earlier decline resumed briefly in 1984; daily use fell from 21% to 19% and

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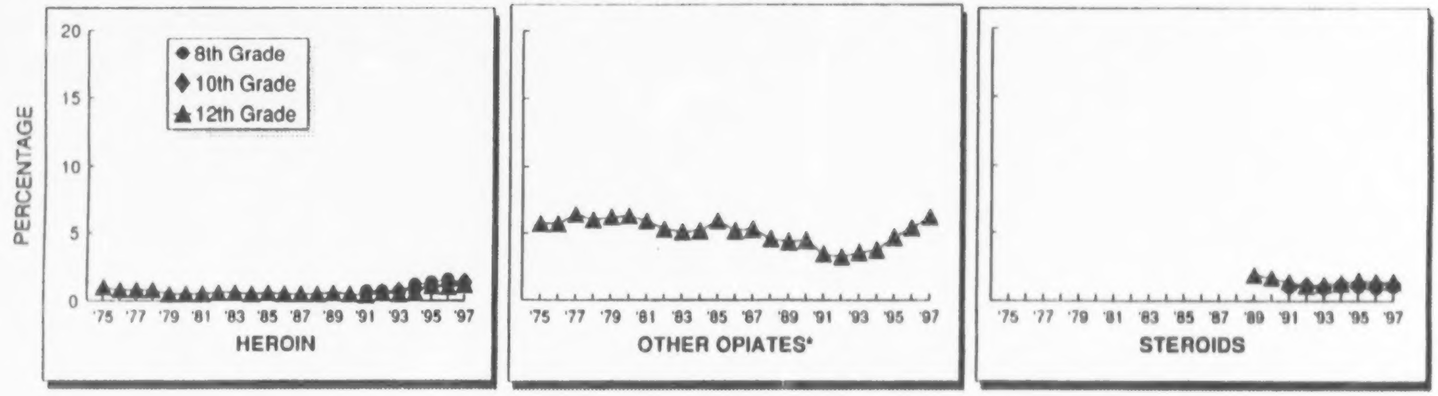
[29] A slight revision was introduced in the question wording in three of the six forms in 1993 and in all six forms beginning in 1994. It added the qualifier of "more than just a few sips" to the definition of a drink of an alcoholic beverage. The 1993 data show the extent of correction that resulted (see Tables 5-1 to 5-4).

FIGURE 5-4f

Trends in Annual Prevalence of Various Drugs for Eighth, Tenth, and Twelfth Graders



*8th and 10th graders are not asked about other opiate use.

daily use of a half-pack or more dropped from 14% to 12%. In the eight years between 1984 and 1992, there was very little further change: 30-day prevalence fell from 29% to 28%, daily use from 19% to 17%, and daily use of a half-pack or more from 12% to 10%. Despite the general decline during this period in the use of most other drugs, despite the restrictive legislation with regard to smoking debated and enacted at state and local levels, and despite prevention efforts being made in many school systems, there was a noteworthy lack of any appreciable decline in smoking rates. After 1992, both the 30-day smoking rate and the current daily smoking rate rose significantly, with monthly use increasing steadily from 28% in 1992 to 37% by 1997 and daily use increasing from 17% to 25%.

- Questions about the use of ***smokeless tobacco*** (Figure 5-4h), which includes chewing tobacco and snuff, were first introduced in 1986. They were omitted in 1990 and 1991 and then reintroduced in 1992. Results show a high rate of use for the sample overall, particularly for males, who account for nearly all of the use. The trends for the period 1986 to 1989 showed a decline in use, with 30-day prevalence falling steadily from 11.5% to 8.4%. When the questions were reintroduced in 1992, the rate (11.4%) almost matched the 1986 level. Use rose to 12.2% in 1995 and then fell to 9.7% in 1997. In 1997, one-fourth (25%) of all seniors had tried smokeless tobacco and 4.4% were current daily users. Because these questions are in a single questionnaire form, the estimates are based on smaller samples than for most other drugs; it is possible to conclude that the usage level since 1992 has really been fairly flat, with random fluctuations in samples accounting for the apparent changes.

- Trend data on ***steroid*** use are available since 1989 (Figure 5-4f). Annual prevalence declined gradually, but steadily, from 1.9% in 1989 to 1.1% in 1992. It then began to rise again, reaching 1.5% in 1995, but has shown no further change since.

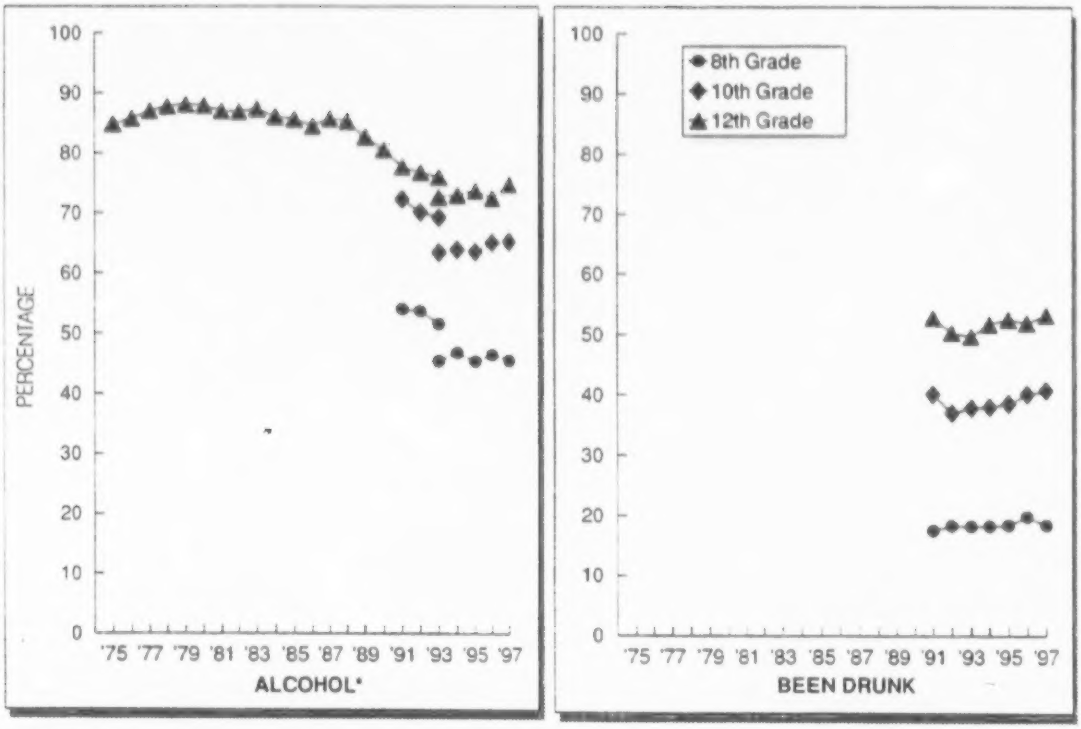
TRENDS IN PREVALENCE 1991-1997: EIGHTH AND TENTH GRADERS

To facilitate cross-grade comparisons, trend data for all three grades (eighth, tenth, and twelfth) are included in Table 5-5 and Figures 5-4a through 5-4i. (Table 2-1 in "Overview of Key Findings" augments Table 5-5 with data from college students and young adults.)

- Since data first became available on all three grade levels, the eighth-, tenth-, and twelfth-grade trends in the use of illicit drugs have moved largely in parallel. From 1991 through 1996, this has meant some increase in use at all grade levels for most drugs (although the eighth graders were the first to show the increase for many of the drugs over the 1991-1992 interval). In 1997, the prevalence rates for most drugs leveled off, or began to level off, in all grades.

FIGURE 5-4g

Trends in Annual Prevalence of Various Drugs for Eighth, Tenth, and Twelfth Graders



*Beginning in 1993 a revised set of questions on alcohol use was introduced, in which respondents were told that an occasion of use meant "more than just a few sips." The dotted lines connect percentages which are based on data from the revised questions. See text for details.

- ***Marijuana use*** (Figure 5-4a) rose particularly sharply among eighth graders, with annual prevalence tripling between 1991 and 1996, from 6% to 18%. Starting a year later, use rose significantly among tenth and twelfth graders as well. Between 1992 and 1996, annual prevalence more than doubled, rising from 15% to 34% among tenth graders. It increased by almost two-thirds, from 22% to 36%, among twelfth graders. In 1997, the prevalence rates continued to increase in grades 10 and 12 (though the increases did not attain statistical significance), but they leveled and even may have begun to decline among the eighth graders. (Figure 5-4a shows that the increase is decelerating in grades 10 and 12.) It is important to note that the two directional changes that have occurred so far have occurred first among eighth graders. This suggests that eighth graders may be the most immediately responsive to changing influences in the larger environment and/or that the later grades are reflecting some cohort effects (i.e., lingering effects of changes in use that occurred in earlier years among a particular year's sample).

  Daily marijuana use also went up sharply in the 1990s in all three grades (see Figure 5-4j). In fact, in proportional terms, the increases were larger than those for annual prevalence. For the period 1992-1996, daily use among eighth graders increased, from 0.2% to 1.5%, before declining significantly to 1.1% in 1997. For the period 1992-1997, daily use among tenth graders rose more, from 0.8% to 3.7%, and among twelfth graders, from 1.9% to 5.8%.

- Annual ***hallucinogen*** use (Figure 5-4d) had risen in all three grade levels by 1992, and a significant increase occurred in 1995, followed by modest increases in 1996 for all three grades. The two components of the hallucinogens class, ***LSD*** and ***hallucinogens other than LSD***, have generally followed the same pattern. Note that LSD currently accounts for most of the hallucinogen use at all grade levels. One further point: in 1996, the 30-day prevalence rate for hallucinogens and LSD specifically, declined in tenth and twelfth grades and showed very little further increase in eighth grade, suggesting that a very recent turnaround may have occurred. The 1997 data confirm this, as annual prevalence for hallucinogen use has begun to fall.

- The increase in ***LSD*** use (Figure 5-4d) is of particular interest because it was one of the first drugs to decline in the long-term epidemic, almost surely due to growing concerns in the early to mid-1970s about its dangers. The more recent increase in the 1990s may reflect the effects of "generational forgetting," that is, replacement cohorts do not have as much concern about its dangers as their predecessors because they have not had comparable opportunities for direct and vicarious learning about the consequences of using the drug.[30]

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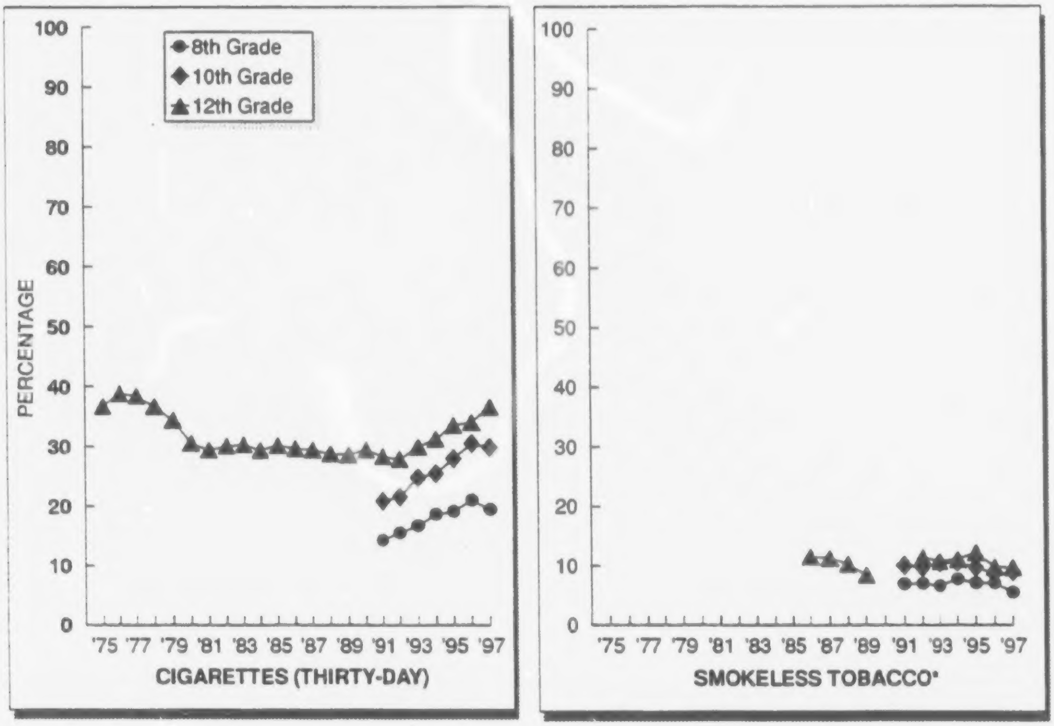
[30] See Johnston, L.D. (1991). Toward a theory of drug epidemics. In R.L. Donohew, H. Sypher, & W. Bukoski (Eds.), *Persuasive communication and drug abuse prevention* (pp. 93-132). Hillsdale, NJ: Lawrence Erlbaum.

FIGURE 5-4h

Trends in Thirty-Day Prevalence of Various Drugs for Eighth, Tenth, and Twelfth Graders



*12th graders: Smokeless tobacco data not available in 1990 or 1991.

- ***Crack*** use (Table 5-5 and Figure 5-4e) began to rise among eighth graders after 1991, among tenth graders after 1992, and among twelfth graders after 1993. The annual prevalence rate has more than doubled among eighth graders (from 0.7% in 1991 to 1.8% in 1996) and tenth graders (from 0.9% in 1992 to 2.1% in 1996), and it has risen by more than half among twelfth graders (from 1.5% in 1993 to 2.4% in 1997). While use continued to increase among twelfth graders in 1997, it leveled in the lower two grades.

- The use of ***other cocaine*** also rose some during the 1990s at all three grade levels, though it did not attain the levels observed in the mid-1980s. Among eighth graders, annual prevalence rose from 1.0% in 1991 to 2.5% in 1996, before leveling. Increases began a year later in the older grades and continued into 1997. Between 1992 and 1997, the increase went from 1.7% to 4.1% among tenth graders and from 2.6% to 5.0% among twelfth graders.

- The use of ***stimulants*** (Figure 5-4a) also has increased at all three grade levels, reaching annual prevalence rates by 1996 of 9.1% for eighth graders (vs. 6.2% in 1991), 12.4% for tenth graders (vs. 8.2% in 1992), and 9.5% for twelfth graders (vs. 7.1% in 1992). Like several other drugs, the rise in stimulant use appears to have begun a year earlier (in 1991) among the eighth graders than among the tenth and twelfth graders. These trends diverge a little in 1997, as use fell significantly in eighth grade, leveled in tenth grade, and continued to increase in twelfth grade.

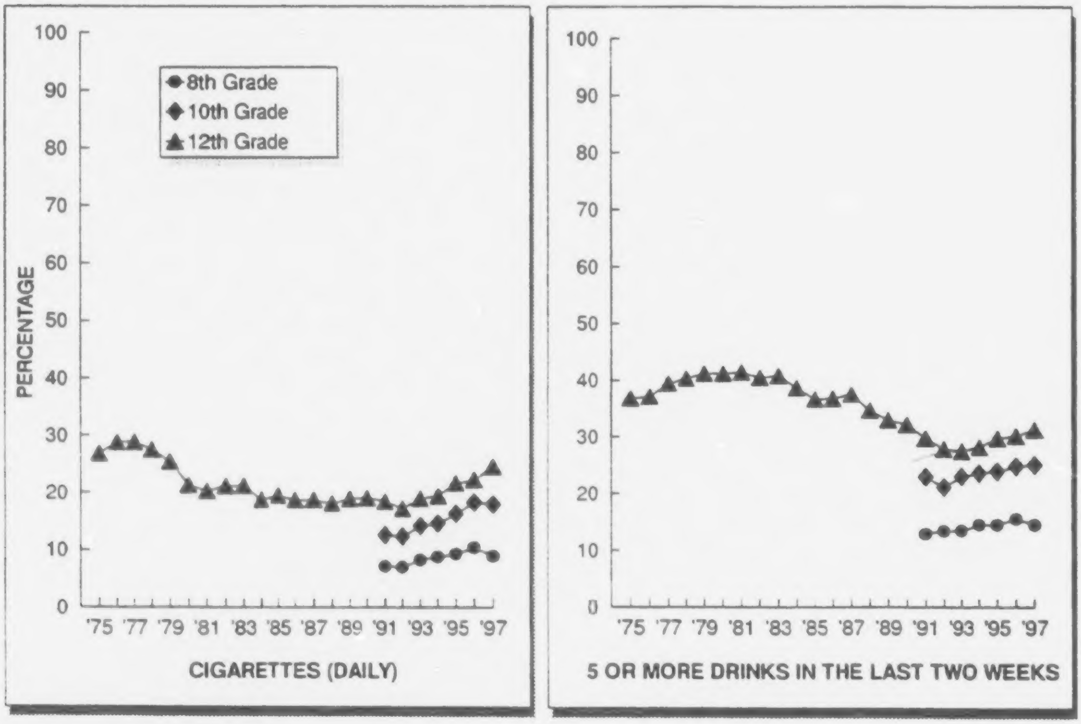
- Between 1991 and 1995, ***inhalant*** use (Figure 5-4b) rose by more than a third among eighth and tenth graders, with annual prevalence reaching 12.8% and 9.6%, respectively. Among twelfth graders, use rose from 6.2% to 8.0% between 1992 and 1995. After 1995, however, inhalant use began to decline at all grade levels.

- ***Tranquilizer*** use has shown a very gradual increase at all three grade levels over the past few years (see Table 5-5 and Figure 5-4b), but in 1997 this increase decelerated in the upper grades and actually decreased in eighth grade.

- There was little systematic change in ***heroin*** use between 1991 and 1993 at any grade level. After 1993 all three grades showed some steady increase. In 1994 heroin use rose significantly among eighth graders, and it rose significantly in 1995 among twelfth graders (see Figure 5-4f). In all three grade levels the annual prevalence for heroin in 1996 was more than double the rate in 1991, though rather little of the change occurred in 1996 or 1997, except for a significant decrease among eighth graders.

FIGURE 5-4i

Trends in Thirty-Day Prevalence of Daily Use of Cigarettes, and Two-Week Prevalence of Heavy Drinking for Eighth, Tenth, and Twelfth Graders



- From 1991 to 1993, the lifetime, annual, and 30-day prevalence measures for ***alcohol*** (Figure 5-4g) showed a small decline in all three grades (except for 30-day use among eighth graders). Since 1993 there has been little change in lifetime prevalence and a slight upward drift in 30-day prevalence in the upper grades.

  Occasional heavy drinking (Figure 5-4i) has risen gradually among eighth graders since 1991, among tenth graders since 1992, and among twelfth graders since 1993. In 1997, however, it seems to have begun to decline in eighth grade, level in tenth grade, and continue to rise in twelfth grade. Self-reported ***drunkenness*** in the past 30 days (Figure 5-4g) shows a fairly similar pattern.

- ***Cigarette smoking*** generally is not expected to move synchronously across the three grade levels because changes are usually the result of cohort effects rather than secular trends. (See Chapter 6 for a further discussion of this point.) However, smoking began to rise among eighth and tenth graders after 1991 and among twelfth graders after 1992, and until 1996 it had been moving steadily upward in all three grades (see Figures 5-4h and 5-4i). Because of this general parallel movement, which is more characteristic of a secular trend, we are inclined to look for some contemporaneous historical correlates. One possibility is that cigarette prices dropped on average because of increased price competition among brands. Another is that cigarette advertising and promotion had grown and/or become more effective at reaching youth. Still a third possibility is that the portrayal of smoking had increased appreciably in the entertainment media. We think there is some evidence supportive of all three possibilities; but whatever the causes, they seemed to reach young people across the spectrum. Therefore, we infer that these changes must have resulted from culture wide influences of the type just mentioned. In 1997, however, the three grades began to diverge again. Thirty-day and daily smoking rates began to decline among eighth graders, to level among tenth graders, and to continue to increase among twelfth graders.

- By way of contrast, the use of ***smokeless tobacco*** (Figure 5-4h) has shown some evidence of decline over the last few years among tenth and twelfth graders and, in 1997, among eighth graders as well.

- ***Steroid*** use (Figure 5-4f) showed little change at any grade level between 1991 and 1997.

FIGURE 5-4j

Trends in Thirty-Day Prevalence of Daily Use of Marijuana for Eighth, Tenth, and Twelfth Graders

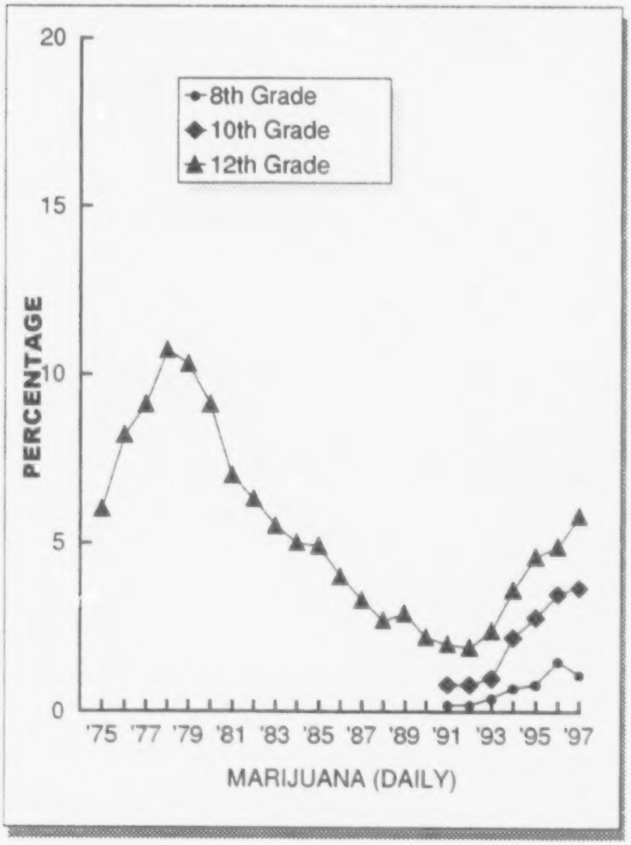


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TABLE 5-5
Trends in Prevalence of Use of Various Drugs for Eighth, Tenth, and Twelfth Graders

(Entries are percentages)

	Lifetime									Annual									30-Day								
	1991	1992	1993	1994	1995	1996	1997	'96–'97 change	'91–'97 change	1991	1992	1993	1994	1995	1996	1997	'96–'97 change	'91–'97 change	1991	1992	1993	1994	1995	1996	1997	'96–'97 change	'91–'97 change
Marijuana/ Hashish																											
8th Grade	10.2	11.2	12.6	16.7	19.9	23.1	22.6	-0.5	+12.4sss	6.2	7.2	9.2	13.0	15.8	18.3	17.7	-0.6	+11.5sss	3.2	3.7	5.1	7.8	9.1	11.3	10.2	-1.1	+7.0sss
10th Grade	23.4	21.4	24.4	30.4	34.1	39.8	42.3	+2.5s	+18.9sss	16.5	15.2	19.2	25.2	28.7	33.6	34.8	+1.2	+18.3sss	8.7	8.1	10.9	15.8	17.2	20.4	20.5	+0.1	+11.8sss
12th Grade	36.7	32.6	35.3	38.2	41.7	44.9	49.6	+4.7ss	+12.9sss	23.9	21.9	26.0	30.7	34.7	35.8	38.5	+2.7	+14.6sss	13.8	11.9	15.5	19.0	21.2	21.9	23.7	+1.8	+9.9sss
Inhalants[a,b]																											
8th Grade	17.6	17.4	19.4	19.9	21.6	21.2	21.0	-0.2	+3.4sss	9.0	9.5	11.0	11.7	12.8	12.2	11.8	-0.4	+2.8sss	4.4	4.7	5.4	5.6	6.1	5.8	5.6	-0.2	+1.2sss
10th Grade	15.7	16.6	17.5	18.0	19.0	19.3	18.3	-1.0	+2.6ss	7.1	7.5	8.4	9.1	9.6	9.5	8.7	-0.8	+1.6ss	2.7	2.7	3.3	3.6	3.5	3.3	3.0	-0.3	+0.3
12th Grade	17.6	16.6	17.4	17.7	17.4	16.6	16.1	-0.5	-1.5	6.6	6.2	7.0	7.7	8.0	7.6	6.7	-0.9	+0.1	2.4	2.3	2.5	2.7	3.2	2.5	2.5	0.0	+0.1
Hallucinogens[b]																											
8th Grade	3.2	3.8	3.9	4.3	5.2	5.9	5.4	-0.5	+2.2sss	1.9	2.5	2.6	2.7	3.6	4.1	3.7	-0.4	+1.8sss	0.8	1.1	1.2	1.3	1.7	1.9	1.8	-0.1	+1.0sss
10th Grade	6.1	6.4	6.8	8.1	9.3	10.5	10.5	0.0	+4.4sss	4.0	4.3	4.7	5.8	7.2	7.8	7.6	-0.2	+3.6sss	1.6	1.8	1.9	2.4	3.3	2.8	3.3	+0.5	+1.7sss
12th Grade	9.6	9.2	10.9	11.4	12.7	14.0	15.1	+1.1	+5.5sss	5.8	5.9	7.4	7.6	9.3	10.1	9.8	-0.3	+4.0sss	2.2	2.1	2.7	3.1	4.4	3.5	3.9	+0.4	+1.7sss
LSD																											
8th Grade	2.7	3.2	3.5	3.7	4.4	5.1	4.7	-0.4	+2.0sss	1.7	2.1	2.3	2.4	3.2	3.5	3.2	-0.3	+1.5sss	0.6	0.9	1.0	1.1	1.4	1.5	1.5	0.0	+0.9sss
10th Grade	5.6	5.8	6.2	7.2	8.4	9.4	9.5	+0.1	+3.9sss	3.7	4.0	4.2	5.2	6.5	6.9	6.7	-0.2	+3.0sss	1.5	1.6	1.6	2.0	3.0	2.4	2.8	+0.4	+1.3sss
12th Grade	8.8	8.6	10.3	10.5	11.7	12.6	13.6	+1.0	+4.8sss	5.2	5.6	6.8	6.9	8.4	8.8	8.4	-0.4	+3.2sss	1.9	2.0	2.4	2.6	4.0	2.5	3.1	+0.6s	+1.2sss
Hallucinogens Other Than LSD																											
8th Grade	1.4	1.7	1.7	2.2	2.5	3.0	2.6	-0.4	+1.2sss	0.7	1.1	1.0	1.3	1.7	2.0	1.8	-0.2	+1.1sss	0.3	0.4	0.5	0.7	0.8	0.9	0.7	-0.2	+0.4sss
10th Grade	2.2	2.5	2.8	3.8	3.9	4.7	4.8	+0.1	+2.6sss	1.3	1.4	1.9	2.4	2.8	3.3	3.3	0.0	+2.0sss	0.4	0.5	0.7	1.0	1.0	1.0	1.2	+0.2	+0.8sss
12th Grade	3.7	3.3	3.9	4.9	5.4	6.8	7.5	+0.7	+3.8sss	2.0	1.7	2.2	3.1	3.8	4.4	4.6	+0.2	+2.6sss	0.7	0.5	0.8	1.2	1.3	1.6	1.7	+0.1	+1.0sss
MDMA (Ecstasy)[c]																											
8th Grade	—	—	—	—	—	3.4	3.2	-0.2	—	—	—	—	—	—	2.3	2.3	0.0	—	—	—	—	—	—	1.0	1.0	0.0	—
10th Grade	—	—	—	—	—	5.6	5.7	+0.1	—	—	—	—	—	—	4.6	3.9	-0.7	—	—	—	—	—	—	1.8	1.3	-0.5	—
12th Grade	—	—	—	—	—	6.1	6.9	+0.8	—	—	—	—	—	—	4.6	4.0	-0.6	—	—	—	—	—	—	2.0	1.6	-0.4	—
Cocaine																											
8th Grade	2.3	2.9	2.9	3.6	4.2	4.5	4.4	-0.1	+2.1sss	1.1	1.5	1.7	2.1	2.6	3.0	2.8	-0.2	+1.7sss	0.5	0.7	0.7	1.0	1.2	1.3	1.1	-0.2	+0.6sss
10th Grade	4.1	3.3	3.6	4.3	5.0	6.5	7.1	+0.6	+3.0sss	2.2	1.9	2.1	2.8	3.5	4.2	4.7	+0.5	+2.5sss	0.7	0.7	0.9	1.2	1.7	1.7	2.0	+0.3	+1.3sss
12th Grade	7.8	6.1	6.1	5.9	6.0	7.1	8.7	+1.6s	+0.9	3.5	3.1	3.3	3.6	4.0	4.9	5.5	+0.6	+2.0sss	1.4	1.3	1.3	1.5	1.8	2.0	2.3	+0.3	+0.9ss
Crack																											
8th Grade	1.3	1.6	1.7	2.4	2.7	2.9	2.7	-0.2	+1.4sss	0.7	0.9	1.0	1.3	1.6	1.8	1.7	-0.1	+1.0sss	0.3	0.5	0.4	0.7	0.7	0.8	0.7	-0.1	+0.4sss
10th Grade	1.7	1.5	1.8	2.1	2.8	3.3	3.6	+0.3	+1.9sss	0.9	0.9	1.1	1.4	1.8	2.1	2.2	+0.1	+1.3sss	0.3	0.4	0.5	0.6	0.9	0.8	0.9	+0.1	+0.6sss
12th Grade	3.1	2.6	2.6	3.0	3.0	3.3	3.9	+0.6s	+0.8ss	1.5	1.5	1.5	1.9	2.1	2.1	2.4	+0.3	+0.9sss	0.7	0.6	0.7	0.8	1.0	1.0	0.9	-0.1	+0.2
Other Cocaine[d]																											
8th Grade	2.0	2.4	2.4	3.0	3.4	3.8	3.5	-0.3	+1.5sss	1.0	1.2	1.3	1.7	2.1	2.5	2.2	-0.3	+1.2sss	0.5	0.5	0.6	0.9	1.0	1.0	0.8	-0.2	+0.3s
10th Grade	3.8	3.0	3.3	3.8	4.4	5.5	6.1	+0.6	+2.3sss	2.1	1.7	1.8	2.4	3.0	3.5	4.1	+0.6	+2.0sss	0.6	0.6	0.7	1.0	1.4	1.3	1.6	+0.3	+1.0sss
12th Grade	7.0	5.3	5.4	5.2	5.1	6.4	8.2	+1.8s	+1.2	3.2	2.6	2.9	3.0	3.4	4.2	5.0	+0.8	+1.8ss	1.2	1.0	1.2	1.3	1.3	1.6	2.0	+0.4	+0.8s
Heroin[e]																											
8th Grade	1.2	1.4	1.4	2.0	2.3	2.4	2.1	-0.3	+0.9sss	0.7	0.7	0.7	1.2	1.4	1.6	1.3	-0.3s	+0.6sss	0.3	0.4	0.4	0.6	0.6	0.7	0.6	-0.1	+0.3sss
10th Grade	1.2	1.2	1.3	1.5	1.7	2.1	2.1	0.0	+0.9sss	0.5	0.6	0.7	0.9	1.1	1.2	1.4	+0.2	+0.9sss	0.2	0.2	0.3	0.4	0.6	0.5	0.6	+0.1	+0.4sss
12th Grade	0.9	1.2	1.1	1.2	1.6	1.8	2.1	+0.3	+1.2sss	0.4	0.6	0.5	0.6	1.1	1.0	1.2	+0.2	+0.8sss	0.2	0.3	0.2	0.3	0.6	0.5	0.5	0.0	+0.3sss
Stimulants[f]																											
8th Grade	10.5	10.8	11.8	12.3	13.1	13.5	12.3	-1.2	+1.8s	6.2	6.5	7.2	7.9	8.7	9.1	8.1	-1.0s	+1.9sss	2.6	3.3	3.6	3.6	4.2	4.6	3.8	-0.8ss	+1.2sss
10th Grade	13.2	13.1	14.9	15.1	17.4	17.7	17.0	-0.7	+3.8sss	8.2	8.2	9.6	10.2	11.9	12.4	12.1	-0.3	+3.9sss	3.3	3.6	4.3	4.5	5.3	5.5	5.1	-0.4	+1.8sss
12th Grade	15.4	13.9	15.1	15.7	15.3	15.3	16.5	+1.2	+1.1	8.2	7.1	8.4	9.4	9.3	9.5	10.2	+0.7	+2.0ss	3.2	2.8	3.7	4.0	4.0	4.1	4.8	+0.7s	+1.6sss

(Table continued on next page)

TABLE 5-5 (cont.)

Trends in Prevalence of Use of Various Drugs for Eighth, Tenth, and Twelfth Graders

	Lifetime									Annual									30-Day								
	1991	1992	1993	1994	1995	1996	1997	'96–'97 change	'91–'97 change	1991	1992	1993	1994	1995	1996	1997	'96–'97 change	'91–'97 change	1991	1992	1993	1994	1995	1996	1997	'96–'97 change	'91–'97 change
Tranquilizers[f]																											
8th Grade	3.8	4.1	4.4	4.6	4.5	5.3	4.8	-0.5	+1.0ss	1.8	2.0	2.1	2.4	2.7	3.3	2.9	-0.4	+1.1sss	0.8	0.8	0.9	1.1	1.2	1.5	1.2	-0.3s	+0.4ss
10th Grade	5.8	5.9	5.7	5.4	6.0	7.1	7.3	+0.2	+1.5ss	3.2	3.5	3.3	3.3	4.0	4.6	4.9	+0.3	+1.7sss	1.2	1.5	1.1	1.5	1.7	1.7	2.2	+0.5ss	+1.0sss
12th Grade	7.2	6.0	6.4	6.6	7.1	7.2	7.8	+0.6	+0.6	3.6	2.8	3.5	3.7	4.4	4.6	4.7	+0.1	+1.1ss	1.4	1.0	1.2	1.4	1.8	2.0	1.8	-0.2	+0.4s
Alcohol[g]																											
Any use																											
8th Grade	70.1	69.3	67.1	—	—	—	—	—	—	54.0	53.7	51.6	—	—	—	—	—	—	25.1	26.1	26.2	—	—	—	—	—	—
			55.7	55.8	54.5	55.3	53.8	-1.5	-1.9[h]			45.4	46.8	45.3	46.5	45.5	-1.0	+0.1[h]			24.3	25.5	24.6	26.2	24.5	-1.7	+0.2[h]
10th Grade	83.8	82.3	80.8	—	—	—	—	—	—	72.3	70.2	69.3	—	—	—	—	—	—	42.8	39.9	41.5	—	—	—	—	—	—
			71.6	71.1	70.5	71.8	72.0	+0.2	+0.4[h]			63.4	63.9	63.5	65.0	65.2	+0.2	+1.8[h]			38.2	39.2	38.8	40.4	40.1	-0.3	+1.9[h]
12th Grade	88.0	87.5	87.0	—	—	—	—	—	—	77.7	76.8	76.0	—	—	—	—	—	—	54.0	51.3	51.0	—	—	—	—	—	—
			80.0	80.4	80.7	79.2	81.7	+2.5ss	+1.7[h]			72.7	73.0	73.7	72.5	74.8	+2.3s	+2.1[h]			48.6	50.1	51.3	50.8	52.7	+1.9	+4.1ss[h]
Been Drunk[i]																											
8th Grade	26.7	26.8	26.4	25.9	25.3	26.8	25.2	-1.6	-1.5	17.5	18.3	18.2	18.2	18.4	19.8	18.4	-1.4	+0.9	7.6	7.5	7.8	8.7	8.3	9.6	8.2	-1.4s	+0.6
10th Grade	50.0	47.7	47.9	47.2	46.9	48.5	49.4	+0.9	-0.6	40.1	37.0	37.8	38.0	38.5	40.1	40.7	+0.6	+0.6	20.5	18.1	19.8	20.3	20.8	21.3	22.4	+1.1	+1.9
12th Grade	65.4	63.4	62.5	62.9	63.2	61.8	64.2	+2.4	-1.2	52.7	50.3	49.6	51.7	52.5	51.9	53.2	+1.3	+0.5	31.6	29.9	28.9	30.8	33.2	31.3	34.2	+2.9	+2.6
Cigarettes																											
Any use																											
8th Grade	44.0	45.2	45.3	46.1	46.4	49.2	47.3	-1.9	+3.3ss	—	—	—	—	—	—	—	—	—	14.3	15.5	16.7	18.6	19.1	21.0	19.4	-1.6	+5.1sss
10th Grade	55.1	53.5	56.3	56.9	57.6	61.2	60.2	-1.0	+5.1sss	—	—	—	—	—	—	—	—	—	20.8	21.5	24.7	25.4	27.9	30.4	29.8	-0.6	+9.0sss
12th Grade	63.1	61.8	61.9	62.0	64.2	63.5	65.4	+1.9	+2.3	—	—	—	—	—	—	—	—	—	28.3	27.8	29.9	31.2	33.5	34.0	36.5	+2.5s	+8.2sss
Smokeless Tobacco[c]																											
8th Grade	22.2	20.7	18.7	19.9	20.0	20.4	16.8	-3.6ss	-5.4sss	—	—	—	—	—	—	—	—	—	6.9	7.0	6.6	7.7	7.1	7.1	5.5	-1.6s	-1.4
10th Grade	28.2	26.6	28.1	29.2	27.6	27.4	26.3	-1.1	-1.9	—	—	—	—	—	—	—	—	—	10.0	9.6	10.4	10.5	9.7	8.6	8.9	+0.3	-1.1
12th Grade	—	32.4	31.0	30.7	30.9	29.8	25.3	-4.5	-7.1s[j]	—	—	—	—	—	—	—	—	—	—	11.4	10.7	11.1	12.2	9.8	9.7	-0.1	-1.7[j]
Steroids[i]																											
8th Grade	1.9	1.7	1.6	2.0	2.0	1.8	1.8	0.0	-0.1	1.0	1.1	0.9	1.2	1.0	0.9	1.0	+0.1	0.0	0.4	0.5	0.5	0.5	0.6	0.4	0.5	+0.1	+0.1
10th Grade	1.8	1.7	1.7	1.8	2.0	1.8	2.0	+0.2	+0.2	1.1	1.1	1.0	1.1	1.2	1.2	1.2	0.0	+0.1	0.6	0.6	0.5	0.6	0.6	0.5	0.7	+0.2s	+0.1
12th Grade	2.1	2.1	2.0	2.4	2.3	1.9	2.4	+0.5	+0.3	1.4	1.1	1.2	1.3	1.5	1.4	1.4	0.0	0.0	0.8	0.6	0.7	0.9	0.7	0.7	1.0	+0.3	+0.2

NOTES: Level of significance of difference between the two most recent classes: s = .05, ss = .01, sss = .001. '—' indicates data not available. '*' indicates less than .05 percent. Any apparent inconsistency between the change estimate and the prevalence estimates for the recent classes is due to rounding error.

Approx. N: 8th Grade = 17,500 in 1991; 18,600 in 1992; 18,300 in 1993; 17,300 in 1994; 17,500 in 1995; 17,800 in 1996; 18,600 in 1997
10th Grade = 14,800 in 1991; 14,800 in 1992; 15,300 in 1993; 15,800 in 1994; 17,000 in 1995; 15,600 in 1996; 15,500 in 1997
12th Grade = 15,000 in 1991; 15,800 in 1992; 16,300 in 1993; 15,400 in 1994; 15,400 in 1995; 14,300 in 1996; 15,400 in 1997

SOURCE: The Monitoring the Future Study, the University of Michigan.

[a] 12th grade only: Data based on five forms. N is five-sixths of N indicated.

[b] 12th grade only. Unadjusted for underreporting of certain drugs. See text for details.

[c] 8th and 10th grade only: Smokeless tobacco data based on one of two forms for 1991–96 and on two of four forms beginning in 1997; N is one-half of N indicated. MDMA data based one form in 1996, N is one-half of N indicated; 1997 data based on one-third of N indicated due to changes in the questionnaire forms. 12th grade only: Data based on one of six forms; N is one-sixth of N indicated.

[d] 12th grade only: Data based on four forms. N is four-sixths of N indicated.

[e] In 1995, the heroin question was changed in three of six forms for 12th graders and in one of two forms for 8th and 10th graders. Separate questions were asked for use with injection and without injection. Data presented here represent the combined data from all forms. In 1996, the heroin question was changed in the remaining 8th and 10th grade form.

[f] 12th grade only: Only drug use which was not under a doctor's orders is included here.

[g] In 1993, the question text was changed slightly in some forms to indicate that a "drink" meant "more than a few sips." The data in the upper line for alcohol came from forms using the old wording, while the data in the lower line came from forms using the revised wording. For 1993 only: Data based on one of two forms for 8th and 10th grades and on three of six forms for 12th grade. N is one-half of N indicated. In 1994–97, data were based on all forms for all grades.

[h] The changes in the '91–'97 change columns for alcohol are actually the '93–'97 changes.

[i] 12th grade only: Data based on two forms. N is two-sixths of N indicated.

[j] 12th grades only: The changes in the '91–'97 change columns for smokeless tobacco are actually the '92–'97 changes.

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TABLE 5-5a

Trends in 30-Day Prevalence of Daily Use of Various Drugs for Eighth, Tenth, and Twelfth Graders

	Daily								
	1991	1992	1993	1994	1995	1996	1997	'96–'97 change	'91–'97 change
Marijuana/ Hashish									
8th Grade	0.2	0.2	0.4	0.7	0.8	1.5	1.1	-0.4ss	+0.9sss
10th Grade	0.8	0.8	1.0	2.2	2.8	3.5	3.7	+0.2	+2.9sss
12th Grade	2.0	1.9	2.4	3.6	4.6	4.9	5.8	+0.9s	+3.8sss
Alcohol[g]									
Any use									
8th Grade	0.5	0.6	0.8	—	—	—	—	—	—
			1.0	1.0	0.7	1.0	0.8	-0.2	-0.2[h]
10th Grade	1.3	1.2	1.6	—	—	—	—	—	—
			1.8	1.7	1.7	1.6	1.7	+0.1	-0.1[h]
12th Grade	3.6	3.4	2.5	—	—	—	—	—	—
			3.4	2.9	3.5	3.7	3.9	+0.2	+0.5[h]
Been Drunk[i]									
8th Grade	0.1	0.1	0.2	0.3	0.2	0.2	0.2	-0.1	0.0
10th Grade	0.2	0.3	0.4	0.4	0.6	0.4	0.6	+0.2s	+0.4sss
12th Grade	0.9	0.8	0.9	1.2	1.3	1.6	2.0	+0.4	+1.1sss
5+ drinks in last 2 weeks									
8th Grade	12.9	13.4	13.5	14.5	14.5	15.6	14.5	-1.1	+1.6
10th Grade	22.9	21.1	23.0	23.6	24.0	24.8	25.1	+0.3	+2.2s
12th Grade	29.8	27.9	27.5	28.2	29.8	30.2	31.3	+1.1	+1.5
Cigarettes									
Any use									
8th Grade	7.2	7.0	8.3	8.8	9.3	10.4	9.0	-1.4s	+1.8ss
10th Grade	12.6	12.3	14.2	14.6	16.3	18.3	18.0	-0.3	+5.4sss
12th Grade	18.5	17.2	19.0	19.4	21.6	22.2	24.6	+2.4s	+6.1sss
1/2 pack+/day									
8th Grade	3.1	2.9	3.5	3.6	3.4	4.3	3.5	-0.8s	+0.4
10th Grade	6.5	6.0	7.0	7.6	8.3	9.4	8.6	-0.8	+2.1sss
12th Grade	10.7	10.0	10.9	11.2	12.4	13.0	14.3	+1.3	+3.6sss
Smokeless Tobacco[e]									
8th Grade	1.6	1.8	1.5	1.9	1.2	1.5	1.0	-0.6	-0.6
10th Grade	3.3	3.0	3.3	3.0	2.7	2.2	2.2	0.0	-1.1
12th Grade	—	4.3	3.3	3.9	3.6	3.3	4.4	+1.0	+0.1[j]

(Footnotes are on the preceding page)

TABLE 5-6

Trends in Prevalence of Use of Heroin *with* and *without* a Needle Eighth, Tenth, and Twelfth Graders

(Entries are percentages of all respondents)

	Percent who used in:											
	Lifetime				Past year				Past month			
	1995	1996	1997	'96-'97 change	1995	1996	1997	'96-'97 change	1995	1996	1997	'96-'97 change
Eighth Graders												
Used heroin only without a needle	0.7	0.9	0.8	0.0	0.5	0.5	0.5	0.0	0.2	0.2	0.2	0.0
Used heroin only with a needle	0.7	0.8	0.7	-0.2	0.5	0.6	0.4	-0.2	0.3	0.3	0.2	-0.2s
Used heroin both ways	0.8	0.7	0.6	-0.1	0.4	0.4	0.3	-0.1	0.2	0.2	0.2	0.0
Used heroin at all	2.3	2.4	2.1	-0.3	1.4	1.6	1.3	-0.3s	0.6	0.7	0.6	-0.1
Approx. weighted N =	8,800	17,800	18,600		8,800	17,800	18,600		8,800	17,800	18,600	
Tenth Graders												
Used heroin only without a needle	0.7	1.1	1.0	0.0	0.5	0.6	0.7	+0.1	0.2	0.2	0.3	+0.1
Used heroin only with a needle	0.6	0.5	0.4	0.0	0.3	0.3	0.3	0.0	0.2	0.2	0.1	-0.1
Used heroin both ways	0.4	0.6	0.6	0.0	0.3	0.3	0.4	+0.1	0.1	0.1	0.2	+0.1
Used heroin at all	1.7	2.1	2.1	0.0	1.1	1.2	1.4	+0.2	0.6	0.5	0.6	+0.1
Approx. weighted N =	8,500	15,600	15,500		8,500	15,600	15,500		8,500	15,600	15,500	
Twelfth Graders												
Used heroin only without a needle	0.9	1.1	1.3	+0.2	0.6	0.6	0.7	+0.2	0.3	0.1	0.3	+0.1
Used heroin only with a needle	0.3	0.3	0.3	0.0	0.2	0.2	0.2	0.0	0.1	0.2	0.1	-0.1
Used heroin both ways	0.4	0.4	0.5	+0.1	0.3	0.3	0.3	0.0	0.1	0.2	0.2	0.0
Used heroin at all	1.6	1.8	2.1	+0.3	1.1	1.0	1.2	+0.2	0.6	0.5	0.5	0.0
Approx. weighted N =	7,700	7,200	7,700		7,700	7,200	7,700		7,700	7,200	7,700	

NOTE: Level of significance of difference between the two most recent classes: s = .05, ss = .01, sss = .001. Any apparent inconsistency between the change estimate and the prevalence estimates for the two years is due to rounding error.
Eighth and tenth grade data based on one of two forms in 1995 and on all forms after 1995; twelfth grade data based on three of six forms.

SOURCE: The Monitoring the Future Study, the University of Michigan.

TABLE 5-7a
Trends in Noncontinuation Rates among Twelfth Graders Who Ever Used Drug in Lifetime

Percent who did not use in last twelve months

	Class of 1975	Class of 1976	Class of 1977	Class of 1978	Class of 1979	Class of 1980	Class of 1981	Class of 1982	Class of 1983	Class of 1984	Class of 1985	Class of 1986	Class of 1987	Class of 1988	Class of 1989	Class of 1990	Class of 1991	Class of 1992	Class of 1993	Class of 1994	Class of 1995	Class of 1996	Class of 1997
Marijuana/Hashish	15.4	15.7	15.6	15.2	15.9	19.1	22.5	24.5	25.8	27.1	25.1	23.8	27.7	29.9	32.3	33.7	34.9	32.8	26.3	19.6	16.8	20.3	22.4
Inhalants	—	70.9	66.7	65.8	57.5	61.3	66.7	64.8	68.4	64.6	63.0	61.6	59.4	61.1	66.5	61.7	62.5	62.7	59.8	56.5	54.0	54.2	58.4
Inhalants, Adjusted	—	—	—	—	50.8	55.7	65.5	63.3	64.4	58.4	59.8	55.7	56.5	59.4	62.9	59.5	61.7	62.4	58.2	55.2	52.8	51.4	56.8
Amyl/Butyl Nitrites	—	—	—	—	41.4	48.6	63.4	63.3	57.1	50.6	49.4	45.3	44.7	46.9	48.5	33.3	43.7	66.7	35.7	35.3	26.7	11.1	40.0
Hallucinogens	31.3	37.7	36.7	32.9	29.8	30.1	32.3	35.2	38.7	39.3	38.8	38.1	37.9	38.2	40.4	37.2	39.6	35.9	32.1	33.3	26.8	27.9	35.1
Hallucinogens, Adjusted	—	—	—	—	31.2	32.5	35.7	38.0	36.7	40.6	36.9	36.1	36.8	37.0	37.4	38.1	39.0	34.0	31.0	33.3	26.0	26.2	35.1
LSD	36.3	41.8	43.9	35.1	30.5	30.1	33.7	36.5	39.3	41.3	41.3	37.5	38.1	37.7	41.0	37.9	40.9	34.9	34.0	34.3	28.2	30.2	38.2
PCP	—	—	—	—	45.3	54.2	59.0	63.3	53.6	54.0	40.8	50.0	56.7	58.6	38.5	57.1	51.7	41.7	51.7	42.9	33.3	35.0	41.0
MDMA (Ecstasy)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	24.6	42.0
Cocaine	37.8	38.1	33.3	30.2	22.1	21.7	24.8	28.1	29.6	28.0	24.3	24.9	32.2	34.7	36.9	43.6	55.1	49.2	45.9	39.0	33.3	31.0	36.8
Crack	—	—	—	—	—	—	—	—	—	—	—	—	27.8	35.4	34.0	45.7	51.6	42.3	42.3	36.7	30.0	36.4	38.5
Other Cocaine	—	—	—	—	—	—	—	—	—	—	—	—	30.0	38.8	38.8	46.5	54.3	50.9	46.3	42.3	33.3	34.4	39.0
Heroin	54.5	55.6	55.6	50.0	54.5	54.5	54.5	50.0	50.0	61.5	50.0	54.5	58.3	54.5	53.8	61.5	55.6	50.0	54.5	50.0	31.3	44.4	42.9
Other Opiates	36.7	40.6	37.9	39.4	38.6	35.7	41.6	44.8	45.7	46.4	42.2	42.2	42.4	46.5	47.0	45.8	47.0	45.9	43.8	42.4	34.7	34.2	36.1
Stimulants	27.4	30.1	29.1	25.3	24.4	21.2	19.3	27.2	33.5	36.6	39.7	42.7	43.5	44.9	43.5	48.0	46.8	48.9	44.4	40.1	39.2	37.9	38.2
Crystal Meth. (Ice)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	51.9	57.6	55.2	45.2	47.1	38.5	36.4	47.7
Sedatives	35.7	39.5	37.9	38.1	32.2	30.9	34.4	40.1	45.1	50.4	50.8	50.0	52.9	52.6	50.0	—	—	—	—	—	—	—	—
Barbiturates	36.7	40.7	40.4	40.9	36.4	38.2	41.6	46.6	47.5	50.5	60.0	50.0	51.4	52.2	49.2	50.0	45.2	49.1	46.0	41.4	36.5	35.5	37.0
Methaqualone	37.0	39.7	38.8	38.0	28.9	24.2	28.3	36.4	46.5	54.2	58.2	59.6	62.5	60.6	51.9	69.6	61.5	62.5	75.0	42.9	41.7	45.0	41.2
Tranquilizers	37.6	38.7	40.0	41.8	41.1	42.8	45.6	50.0	48.1	50.8	48.7	46.8	49.5	48.9	50.0	51.4	50.0	53.3	45.3	43.9	38.0	36.1	39.7
Alcohol[a]	6.2	6.7	5.9	5.8	5.3	5.7	6.0	6.5	5.7	7.1	7.2	7.4	7.0	7.3	8.8	9.9	11.7	12.2	12.6 9.1	— 9.2	— 8.7	— 8.5	— 8.4
Been Drunk	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	19.4	20.7	20.6	17.8	16.9	16.0	17.1
Cigarettes[b]	16.0	16.7	16.2	17.9	19.6	21.4	20.8	19.1	18.6	18.5	15.9	17.0	17.1	18.2	18.5	18.2	17.4	18.6	16.9	15.9	14.6	13.5	13.1
Smokeless Tobacco[b]	—	—	—	—	—	—	—	—	—	—	—	21.8	18.4	25.7	26.2	—	—	29.6	25.5	33.1	26.5	27.3	26.2
Steroids	—	—	—	—	—	—	—	—	—	—	—	—	—	—	36.7	41.4	33.3	47.6	40.0	45.8	34.8	26.3	41.7

NOTE: "—" indicates data not available.
SOURCE: The Monitoring the Future Study, the University of Michigan.

[a] In 1993, the question text was changed slightly in three forms to indicate that a "drink" meant "more than a few sips." The data in the upper line for alcohol came from forms using the original wording, while the data in the lower line came from forms using the revised wording. In 1993, each line of data was based on three of six questionnaire forms. Beginning in 1994, data were based on all six questionnaire forms.

[b] Percentage of regular users (ever) who did not use at all in the last thirty days.

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TABLE 5-7b

Trends in Noncontinuation Rates among Twelfth Graders Who Used Drug Ten or More Times in Lifetime

Percent who did not use in last twelve months

	Class of 1975	Class of 1976	Class of 1977	Class of 1978	Class of 1979	Class of 1980	Class of 1981	Class of 1982	Class of 1983	Class of 1984	Class of 1985	Class of 1986	Class of 1987	Class of 1988	Class of 1989	Class of 1990	Class of 1991	Class of 1992	Class of 1993	Class of 1994	Class of 1995	Class of 1996	Class of 1997
Marijuana/Hashish	4.0	4.0	4.1	3.7	4.6	5.4	7.2	7.6	8.3	8.8	7.8	7.9	9.2	9.9	10.6	12.3	10.5	10.9	7.8	5.0	4.7	6.6	7.7
Inhalants		48.9	42.6	34.6	23.8	25.2	23.8	27.2	23.1	23.4	25.8	15.3	21.1	21.5	25.9	24.0	23.7	28.6	21.8	26.4	21.6	24.8	25.2
Nitrites[a]																							
Hallucinogens	10.8	16.1	15.2	10.8	8.1	8.4	7.7	7.5	13.0	14.1	12.2	11.1	11.9	16.6	21.8	16.5	17.4	11.5	12.1	14.3	10.6	9.0	12.2
LSD	15.2	17.3	18.0	12.2	7.4	6.4	7.1	7.5	15.3	12.1	12.6	12.2	11.5	16.0	21.2	16.0	18.5	11.4	11.9	15.3	11.5	10.5	16.8
PCP[a]																							
Cocaine	7.7	8.2	6.2	3.8	3.1	3.1	3.1	2.9	6.2	3.1	2.5	3.5	7.6	11.4	11.3	19.6	25.3	20.2	14.1	22.9	9.6	8.8	12.0
Crack[b]	—	—	—	—	—	—	—	—	—	—	—	—	13.4	2.1	5.2	26.2	31.1	15.3	16.4	16.8	6.3	8.3	17.4
Other Cocaine	—	—	—	—	—	—	—	—	—	—	—	—	10.2	6.1	16.2	18.5	24.3	23.2	14.7	24.1	15.5	13.9	14.6
Heroin[a]																							
Other Opiates	9.6	11.6	9.7	9.9	8.7	10.8	10.1	13.5	16.4	15.4	12.2	13.8	15.6	19.3	15.2	15.9	16.1	16.8	16.7	16.8	12.6	11.5	10.1
Stimulants	8.0	9.8	7.6	7.4	6.1	4.1	4.4	8.4	10.7	12.7	17.5	17.6	17.5	16.0	17.4	18.1	17.2	19.8	13.5	13.8	11.9	10.2	10.8
Crystal Meth (Ice)[a]																							
Sedatives[c]	13.6	16.2	12.4	12.8	8.6	10.5	7.6	8.6	16.4	20.8	23.6	19.7	23.1	25.2	17.3	—	—	—	—	—	—	—	—
Barbiturates	13.4	16.5	12.9	13.5	11.2	11.7	8.9	12.6	17.7	22.8	20.6	19.7	20.7	23.4	18.0	19.8	19.7	23.4	11.0	14.9	10.9	8.3	11.1
Methaqualone[c]	13.5	15.9	11.9	13.1	6.1	6.0	4.9	8.0	16.3	23.3	26.7	24.9	32.2	29.8	18.6	—	—	—	—	—	—	—	—
Tranquilizers	12.0	13.0	11.1	14.4	14.1	14.3	16.3	16.0	14.8	18.8	19.2	15.0	17.1	15.8	11.7	19.3	13.1	21.0	6.7	13.8	6.2	6.9	13.9
Alcohol[d]	0.6	0.8	0.6	0.9	0.7	0.8	1.0	0.9	0.9	1.1	1.2	1.0	1.1	1.2	1.5	1.9	1.9	2.3	2.3 2.5	— 2.1	— 2.0	— 1.6	— 1.9
Been Drunk	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	3.3	4.1	4.6	3.3	2.8	2.1	3.6
Steroids[a]																							

NOTE "—" indicates data not available

SOURCE The Monitoring the Future Study, the University of Michigan

[a] The cell entries in these rows were omitted because they were based on fewer than 50 seniors who used ten or more times. All other cells contain more than 50 cases.

[b] Based on 85 cases in 1987, 54 cases in 1988, and 56 cases in 1989. Crack was included in all six questionnaire forms in 1990–97.

[c] Based on too few cases in 1990–97, because this question was asked in only one of the six questionnaire forms.

[d] In 1993, the question text was changed slightly in three forms to indicate that a "drink" meant "more than a few sips." The data in the upper line for alcohol came from forms using the original wording, while the data in the lower line came from forms using the revised wording. In 1993, each line of data was based on three of six questionnaire forms. Beginning in 1994, data were based on all six questionnaire forms.

TRENDS IN NONCONTINUATION RATES: TWELFTH GRADERS

Table 5-7 shows how the user noncontinuation rates observed for the various classes of drugs have changed over time among twelfth graders. The noncontinuation rate is defined here as the percentage of those who ever used the drug but did not use it in the 12 months prior to the survey.

- ***Marijuana*** showed some increase in the noncontinuation rates between 1979 (16%) and 1984 (27%). This increase gave rise to the greater drop in annual than in lifetime prevalence, because the latter is influenced only by changes in the initiation rate, whereas the former is influenced by both the initiation rate *and* the noncontinuation rate. Between 1984 and 1987 there was no further increase, followed by another rise to 35% in 1991. After 1991 the noncontinuation rate fell sharply to 17% by 1995, which helps to explain the sharp turnaround in the annual and 30-day prevalence rates. By 1997, the noncontinuation rate had reached 22%.

- The noncontinuation rate for ***cocaine*** decreased from 38% in 1976 to 22% in 1979, corresponding to the period of increase in the overall prevalence of use. It then remained fairly stable through 1986, corresponding to a period of stability in the actual prevalence statistics. After 1986, use fell substantially, reflecting in part the considerable increase in the rate of noncontinuation—from 25% in 1986 to 55% in 1991. After 1991, the noncontinuation rate had been declining fairly rapidly, reaching 31% in 1996, but in 1997 the noncontinuation rate rose to 37%.

- ***Crack*** showed a sharp rise in noncontinuation as prevalence rates declined, from 28% in 1987 to 52% in 1991. The noncontinuation rate fell to 30% by 1995 but then rose to 39% by 1997.

- Noncontinuation of ***stimulant*** use rose between 1982 (27%) and 1992 (49%). (Earlier data, based on the unrevised questions, suggest that the change began after 1981.) Since 1992, noncontinuation has fallen to 38% in 1997 as overall use has increased.

- Much of the previous decline in ***sedative*** use also was accounted for by a changing rate of noncontinuation for the specific substances involved. For example, in the case of ***barbiturates***, the noncontinuation rate rose from 36% in 1979 to 52% in 1988 (but it then declined to 37% by 1997). Corresponding figures for ***methaqualone*** are 29%, 61%, and 41%, respectively.

- As overall use declined, ***tranquilizer*** users showed a steady, gradual increase in their noncontinuation rates between 1975 and 1982, from 38% to 50%. Then, until 1992, there was little further systematic change. After 1992, though, there was a decline, from 53% in 1992 to 36% in 1996. An increase, to 40%, occurred in 1997.

- Between 1981 and 1994, the ***LSD*** noncontinuation rate fluctuated within a rather narrow range (between 34% and 41%), without a clear trend developing. Between 1991 and 1996, though, the noncontinuation rate dropped from 41% to 30%, but then it rose to 38% in 1997.

- ***Steroid*** use had an increase in noncontinuation (to 48%) in 1992, a year in which there was an increase in the perceived dangers of using steroids, but the rate dropped back some to 26% by 1996 followed by an increase to 42% in 1997.

- Although ***alcohol*** has always had an extremely low rate of noncontinuation, that rate increased gradually from about 1988 to 1993, perhaps reflecting the changed norms regarding its use (see Chapter 8) that, in turn, may have reflected the impact of changing the drinking age laws in a number of states and a greater emphasis on the dangers of drunk driving. There has been little further change since 1993, however.

- Table 5-7 provides noncontinuation rates for seniors who were more established users, that is, for those who reported having used the drug ten or more times in their life. It shows that noncontinuation is far less likely among heavier users than among all users of a given drug. Further, while the trends in noncontinuation mentioned above generally have been similar to trends observed in the noncontinuation rates for heavier users of those same drugs, the fluctuations have tended to be considerably smaller among the heavier users.

  The reader is cautioned that the number of cases in each cell in Table 5-7b is considerably smaller than in most other tables—particularly when overall usage rates are low to start with; therefore the trend data are much more uneven.

- Noncontinuation rates for experienced users of ***inhalants*** actually dropped in the late 1970s, perhaps as a result of the advent of nitrites—which are used at older ages than most of the other inhalants. However, when the use of nitrites declined during the 1980s, the noncontinuation rates for experienced users failed to increase.

- Note the sharp rise in the late 1980s in the noncontinuation rates for ***cocaine*** and ***crack***, even among the more experienced users. The noncontinuation rates peaked by 1991, before falling back as the use of these drugs became more popular.

IMPLICATIONS FOR PREVENTION

Whenever prevention programs are designed—whether for schools, families, communities, or the media—questions arise as to what should be prevented and what can be prevented. While it is axiomatic that the initiation of use should and can be prevented, there is considerably less consensus as to whether the discontinuation of use is a realistic goal. We believe the results just presented should help to inform that debate considerably.

It is clear that the totality of social forces that brought about the large declines in drug use during the 1980s and the substantial increases in use during the 1990s operated through their effects on both initiation rates and noncontinuation rates. Put another way, the decreases and subsequent increases in annual and 30-day prevalence rates were considerably larger than could be explained by fluctuations in initiation rates alone. Noncontinuation also can be influenced appreciably and, therefore, should be a component of any comprehensive prevention strategy.

It is useful to distinguish among users at different levels of involvement. A comparison of the rates in Table 5-7a, based on all previous users, and Table 5-7b, based only on people who reported having used the drug ten or more times, is highly instructive. Clearly, very appreciable proportions of beginning users can be dissuaded from continuing their use; but once they have reached a certain level of involvement (even as few as ten occasions of use), only very modest proportions have been so dissuaded—even in the best of times. This makes early intervention not only a viable goal for prevention but also particularly important one.

COMPARISONS AMONG SUBGROUPS IN TRENDS IN PREVALENCE

Trend comparisons are given below for population subgroups defined on the following six dimensions: gender, college plans, region of the country, population density, socioeconomic status, and racial/ethnic group. In general, we will focus on the results from twelfth graders, because there is a much shorter trend interval available for eighth and tenth graders. Appendix D to this volume contains tables providing subgroup trends on many drugs for all three grade levels.

Gender Differences in Trends

- Most of the gender differences mentioned earlier for individual classes of drugs have remained relatively unchanged over the past 23 years—that is, any trends in overall use have been fairly parallel for males and females. There are, however, some exceptions (see Appendix D).

- The absolute differences between genders in ***marijuana*** use narrowed somewhat between the 1970s and 1980s, although both genders saw a similar decline in use from 1979 to 1992. At all three grade levels, both genders also have shown an increase in marijuana use since 1992, but the difference is growing somewhat larger again. This pattern, where a longstanding difference between subgroups tends to enlarge in periods of increasing use and to diminish during declines in use, can be seen for a number of cross-break variables (see, for example, Figure 5-10).

- Between 1975 and 1977, there was a small gender difference in ***tranquilizer*** use for twelfth graders (females used them more frequently than males). This difference virtually disappeared by 1978, and there was no gender difference for some years, although use among males has been rising a bit more in the 1990s. There has been a consistent gender difference in eighth grade, with slightly higher use among females. In tenth grade there has been no consistent gender difference in tranquilizer use.

- Among seniors, gender differences in ***cocaine*** use were greatest in the peak years of use (1979 through 1986); male use was higher and diminished considerably during the decline phase. In the 1990s, the differences widened again as use increased more among males. There has been no gender difference in cocaine use in eighth or tenth grades.

  The gender differences in ***crack*** use are very similar to those for cocaine use overall: there are higher rates of use among male twelfth graders compared to females, but there is little difference among eighth and tenth graders. There has been little difference in the trends for the recent time intervals for which data are available (since 1991 for eighth and tenth graders and since 1986 for twelfth graders, though use grew a bit more among twelfth-grade males in the 1990s).

- Regarding ***stimulant*** use by twelfth graders, a gender difference emerged in 1981 and 1982 using the original version of the question; but the revised question introduced in 1982 showed no gender difference, suggesting that over-the-counter diet pills accounted for the higher use among females in those two years. Since 1982, the rates for both genders have remained very close, showing a substantial decrease in use through 1992 and showing a comparable increase in use since then. In both eighth and tenth grades, females consistently reported higher use and showed a more rapid increase in use from 1991-1992 to 1995-1996, when use leveled.

- During the long period of decline in use among seniors, gender differences in the use of ***opiates other than heroin*** had converged by 1992. (Males almost always have had higher rates of use.) However, males have shown a sharper increase in use since then, opening the gap again.

- The proportion of males who used ***any illicit drug*** in the prior year rose between 1975 and 1978, from 49% to 59%, and then declined steadily to 29% by 1992 (see Figure 5-7). Use among females peaked later, increasing from 41% in 1975 to 51% in 1981 and then dropping to 25% by 1992. (If amphetamine use is not included in the statistics, use by females peaked earlier [in 1979] and then declined as well.) Both male and female rates were up considerably by 1997, to 44% and 40%, respectively. The earlier declines for both genders were attributable largely to the declining marijuana use rates; the subsequent declines (through 1992) were due to decreases in the use of other illicit drugs (primarily cocaine), in addition to marijuana. The more recent increases are due to increases in marijuana use in 1994 through 1997 as well as increases in the use of several other drugs.

- Although trends tend to remain fairly parallel, when amphetamine use is excluded from the calculations for ***illicit drugs other than marijuana***, somewhat different levels emerge for males and females. Male use is higher.

- Among twelfth graders the gender differences in ***alcohol*** use narrowed slightly between 1975 and 1987. For example, the 30-day prevalence rates for males and females differed by 12.8 percentage points in 1975 (75.0% vs. 62.2%, respectively), but that difference was down 6.8 percentage points by 1987. (In 1997 the difference was 7.3 percentage points.) Although substantial gender differences in ***daily use*** and ***occasions of heavy drinking*** still remain, by 1993 differences had narrowed there also (Figures 5-5 and 5-6). For example, between 1975 and 1993 the proportion of males who reported having five drinks in a row during the prior two weeks showed a net decrease of 14 percentage points (49% to 35%), whereas such use among females decreased by only 5 percentage points, from 26% to 21%.[31] By 1997, rates for both genders had risen slightly, to 38% and 24%, respectively.

- On one of the six questionnaire forms administered to the twelfth graders, respondents are asked separately about their use of beer, wine, and hard liquor. The answers to these questions reveal that differences in beer consumption account for much of the large gender difference in occasions of heavy drinking: 33% of 1997 senior males (vs. 21% of the females) reported having ***five or more beers*** in a row during the prior two weeks. Males were also somewhat more likely than females to report having ***five or more drinks of hard liquor*** (24% for males vs. 19% for females) but about equally likely to have drunk ***wine*** that heavily (7% for males and 6% for females). This pattern—a large gender difference in heavy use of beer, a smaller difference in heavy use of hard liquor, and very little difference in heavy use of wine—has been present throughout the study, with little systematic change over time. In 1988, questions on ***wine coolers*** were added and here the gender difference is reversed: in 1997, 7% of the males and 11% of the females drank five or more wine coolers in a row in the prior two weeks.

In the lower grades, male and female drinking rates are more equivalent and have remained so since first measured in 1991. Unlike the twelfth graders, there is virtually no gender difference in annual prevalence, or in the annual prevalence of having been drunk. These gender differences seem to emerge with age, as is the case for many of the drugs. Emerging differences with age also hold true for binge drinking in the prior two weeks. The data consistently have shown little gender difference in eighth grade, a modest one in tenth grade, and a large one (though it has diminished somewhat) in twelfth grade. The same pattern has been true for self-reported ***drunkenness*** (see Tables D-25 through D-28).

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[31] It is worth noting that the same number of drinks produces substantially greater impact on the blood alcohol level of the average female than the average male, because of gender differences in the metabolism of alcohol and in body weight. Thus, gender differences in frequency of actually getting drunk may not be as great as the binge drinking statistics would indicate, since they are based on a fixed number of drinks.

- In 1976 we observed that, among twelfth graders, females caught up to males in ***daily cigarette smoking*** and by 1977 exceeded them (see Figure 5-5). Between 1977 and 1981, both genders showed a decline in the prevalence of such smoking, but use among males dropped slightly more, resulting in females maintaining higher rates of daily smoking until 1990. However, the gender difference declined in the latter half of the 1980s as male use began to rise gradually and female use declined a bit. The increase in smoking among males accelerated in the 1990s while female use did not begin to rise until after 1992. The net result was a crossover of the two lines for daily prevalence in 1991, followed by a parallel increase after 1992.

  At the eighth and tenth grades there has been very little gender difference in 30-day or daily smoking levels. Both genders moved up sharply in the early 1990s until 1997, when use leveled or declined.

- Very large gender difference in the use of ***smokeless tobacco*** have been consistent at all grade levels, with much higher rates among males. From 1991 through 1997, there has been some decline overall in use among eighth- and tenth-grade males. Because of the smaller samples on which this question is based in twelfth grade, the trend is less clear and there is no consistent pattern of change.

Trend Differences Related to College Plans

- Both college-bound and noncollege-bound students have shown fairly parallel trends in overall ***illicit drug use*** over the years (see Figure 5-8), with the noncollege-bound consistently having the higher rate.[32]

- Changes in use of the other ***specific drug classes*** also have been generally parallel for the two groups since 1976, with only minor exceptions (see Appendix D). Between 1983 and 1986, annual ***cocaine*** use increased very little among the college-bound seniors but rose by about one-quarter among the noncollege-bound, very likely due to the greater popularity of ***crack*** among the noncollege-bound. After 1986, both groups showed large declines in use and some convergence in their rates of cocaine use.

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[32] Because of excessive missing data in 1975 on the variable measuring college plans, group comparisons are not presented for that year.

Rates of cocaine use have been rising in all grades (at least since 1991 in the case of eighth graders and since 1992 in the case of tenth and twelfth graders). In the two lower grades, this rise has been sharper among those not planning to attend college, enlarging the already substantial differences between these two groups. The story is largely the same for both components of cocaine use, ***crack*** and ***other cocaine***. In twelfth grade, however, there is less proportional difference between the college-bound and the noncollege-bound and less evidence of such a divergence since 1992, although there has been some. Both groups have shown a rise in all forms of cocaine use.

- As the overall prevalence of a number of drugs fell through 1992 among twelfth graders, there was some convergence of usage rates between the college-bound and noncollege-bound, due to a greater drop among the noncollege-bound. This was true for ***tranquilizers, sedatives, methaqualone, stimulants, barbiturates, nitrite inhalants, hallucinogens other than LSD, LSD,*** and ***opiates other than heroin.*** But as use of some of these drugs began to increase after 1992, the differences have grown larger for many of them (e.g., LSD, psychedelics other than LSD, stimulants, and opiates other than heroin). The increases are sharper, and in some cases start earlier, among the noncollege-bound.

- For many years there was only a modest difference in the low annual ***heroin*** prevalence rates observed in twelfth grade for the college- and noncollege-bound; in recent years, however, the difference has grown larger because heroin use increased more sharply among the noncollege-bound.

  At the lower grade levels there consistently has been a larger proportional and absolute difference in heroin use between these two groups, and in both grades the noncollege-bound group showed an earlier and sharper rise in heroin use than their counterparts who said they expected to complete four years of college.

- The noncollege-bound consistently have had higher rates of ***LSD*** use in all years measured at all three grade levels, although their use has generally moved in the same direction over time. The differences between them have enlarged at all three grade levels during the 1990s, as use increased, but particularly in the lower grades.

- The ***binge drinking*** rates of the two groups have converged modestly since 1981 among the twelfth graders, though the rate for the college-bound remains considerably lower. Both groups have shown modest increases since 1993.

In eighth and tenth grades there are much larger differences in binge drinking rates, and the two groups have been diverging because the noncollege-bound have shown some steady increases in binge drinking, whereas the college-bound have shown rather little increase.

- At all three grade levels there have been consistent and very large differences in current daily prevalence of ***cigarette smoking*** between the noncollege-bound (who have higher use) and the college-bound. (For example, in 1997 the daily smoking rate was three times as high among the noncollege-bound eighth graders, at 25% vs. 7% for the college-bound.) In general, the two groups have moved pretty much in parallel at the twelfth-grade level, except that during the period 1979 through 1992 use rose gradually among the college-bound but not among the noncollege-bound, reducing the gap between them (see Figure 5-9). At the eighth- and tenth-grade levels, however, the two groups diverged during the sharp increase in smoking in the early 1990s.

- There has been a large and reasonably consistent difference in the rates of ***steroid*** use in the two groups at all three grade levels, with the noncollege-bound considerably more likely to be use steroids than the college-bound.

Regional Differences in Trends

- In all four regions of the country, proportions of high school seniors using ***any illicit drug*** during the year reached their peaks in 1978 or 1979 (Figure 5-10a), and then, through 1992, generally fell. Since 1992, use of any illicit drug has increased fairly steadily in all four regions, although it leveled after 1995 in the North Central and decelerated considerably in the South.

- As noted, a major factor in the early rise of ***illicit drug use other than marijuana*** (Figure 5-10a) was an increase in reported ***amphetamine*** use. The rise in amphetamine use among seniors appeared in all four regions; however, the rise in lifetime prevalence from 1978 to 1981 was only 6 percentage points in the South, whereas in the other regions the percentages rose between 9 and 12 points. In essence, the South was least affected by both the rise and the fall in reported amphetamine use. (After 1981 all four regions showed substantial declines in amphetamine use through about 1992.) Since 1992, all regions have shown some increase. In 1984 and 1985, when the cocaine and crack epidemics were at their peaks, it was the Northeast and the West were most affected and showed some increase in the index of illicit drug use other than marijuana before the longer-term decline took over again. All regions have shown some modest increase in illicit drug use other than marijuana since 1992.

- ***Cocaine*** use has shown very different trends in the four regions of the country, leading to the emergence of one of the largest regional differences observed for any of the drugs. (See Figure 5-10b for differences among twelfth graders in lifetime prevalence trends.) In the mid-1970s, there was relatively little regional variation in cocaine use, but as the nation's cocaine epidemic grew, large regional differences emerged. By 1981, annual use had roughly tripled in the West and Northeast, nearly doubled in the North Central, and increased "only" by about 30% in the South. This pattern of large regional differences held for about six years, until a sharp decline in the Northeast and the West substantially reduced them. At all three grade levels there has been a modest overall increase in use in all regions since 1991 or 1992.

- After ***crack*** use was first measured among twelfth graders in 1987, its use dropped in all four regions, but most in the West and Northeast, both of which initially reported higher use rates than the other regions. By 1991 little regional difference remained, although the West still had the highest rate of use. Since 1991 or 1992 there has been some increase in all regions, but particularly in the West. In eighth and tenth grades, all regions have generally shown some increase in crack use since the early 1990s. Again, the West shows the largest increases and the highest levels of use.

- ***Marijuana*** use rose substantially in all four regions after 1991, for eighth graders, and after 1992 for tenth and twelfth graders. In 1997, most regions showed a leveling or turnaround for eighth and tenth graders (the Northeast being the exception). The long-term trends for twelfth graders generally showed quite parallel trends from 1975-1992, with the South pretty consistently having the lowest level and the Northeast the highest.

- Between 1975 and 1981, sizeable regional differences in ***hallucinogen*** use emerged, as use in the South dropped appreciably. In 1981, both the North Central and the West had annual prevalence rates that were about two and one-half times higher than the South (10.3%, 10.4%, and 4.1%, respectively) while the Northeast was three times as high (12.9%). After 1981, hallucinogen use dropped appreciably in all regions except in the South (which continued to have the lowest rate), considerably reducing these regional differences. In the early 1990s, use was consistently lower than average in the South, but the differences among the other three regions were small. A considerable increase in the South after 1991 brought the annual rates up to the level of the other regions. Since 1995, use has dropped in the West and North Central and leveled in the South.

  Between 1988 and 1993, the use of ***LSD*** did not vary much by region, although in earlier years, the trend story was quite similar to that described for hallucinogens as a group of drugs. After 1993, use went up quite sharply in the Northeast region, once again creating regional differences.

- Between 1979 and 1982, ***PCP*** use dropped precipitously in all regions. The drop was greatest in the Northeast, which in 1979 had a usage rate roughly double that of all the other regions. In general, PCP use has remained low since 1982.

- Among twelfth graders, from the early 1980s to the early 1990s all four regions exhibited a substantial decline in 30-day ***alcohol*** prevalence and in occasions of ***binge drinking***. As a result, the regional differences diminished somewhat; however, the relative positions of the four regions have remained essentially unchanged. The South and the West still have the lowest rates, the Northeast and North Central the highest. In the mid-1990s some increase in use began in all four regions.

- It is noteworthy that from 1992-1994—a period of overall increase in cigarette smoking—the West was the only region that did not show an increase in ***daily smoking*** in twelfth grade (although by 1995 use began to increase in the West as well). This lack of increase in the West may be due to the fact that California conducted a major anti-smoking campaign in those years. There also was a similar lag in eighth and tenth grades in the West.

- The use of ***smokeless tobacco*** has generally been highest in the South at all three grade levels, followed closely by the North Central. Among twelfth graders, however, use in the North Central has risen sharply since 1989, giving that region considerably higher rates than the others at present.

Trend Differences Related to Population Density

Appendix D contains trend data on many drugs for the three levels of community size distinguished here. Selected figures are presented in this chapter.

- Proportions of seniors using ***any illicit drug*** in all three levels of community size peaked in 1979 (see Figure 5-11a). Although the smaller metropolitan areas and the nonmetropolitan areas never closed the gap between their counterparts in the large metropolitan areas at the peak levels, they did narrow it considerably. Most of that narrowing was due to changing levels of marijuana use, and most of it occurred prior to 1978. After a long period of decline on the any-illicit-drug-use measure, all three levels of community size showed increases after 1991 or 1992. For the large metropolitan areas, the increases appeared to halt after 1995.

- The overall proportion of twelfth-grade students involved in ***illicit drug use other than marijuana*** peaked in communities of all sizes in 1981, and then fell (Figure 5-11a). In the early 1990s, the large metropolitan areas actually showed slightly lower rates than the other two strata—a reversal of earlier differences. After 1991 or 1992, all three strata started to increase gradually, though the increase halted after 1995 in the large metropolitan areas.

- During the years in which use of various drugs increased, significant differences emerged among the three levels of urbanicity in use of a number of specific classes of drugs. During the 1980s those differences narrowed, as use rates declined. Figure 5-11b shows the trends for annual prevalence of ***alcohol, marijuana***, and ***cocaine***. It shows that in the peak years of use for each drug, the differences among the three population density strata were greatest (with large cities at the top), but that as use declined, the three strata tended to converge.

  For example, the increase in ***cocaine*** use between 1976 and 1979, although dramatic at all levels of urbanicity, was clearly greatest in the large cities. Between 1980 and 1984, use was fairly stable in all groups, but in 1985 it showed a rise in all groups. In 1986, use stabilized again in all groups, but in 1987, it began a decline. Just as the earlier rise had been greatest in the large cities, so was the decline (see Figure 5-11b). By 1990, there were only small differences by urbanicity in cocaine use among seniors, and this is still the case. There are very small differences in the eighth and tenth grades as well.

- In the late 1980s, the use of ***crack*** declined more in the large cities than in the smaller areas. Between 1986, when it was first measured among twelfth graders, and the low point in 1991, annual use was down by 4.7 percentage points (from 5.9% to 1.2%) in the large cities, by 1.8 percentage points (to 1.7%) in the other cities, and by 2.3 percentage points (to 1.2%) in the nonmetropolitan areas. There has been a gradually rising trend line since 1991 or 1992 in all three grades.

- There was a greater decline in ***30-day alcohol*** prevalence in the large cities from 1980 through 1983, which nearly eliminated the differences among strata. Since then, the rates of use by urbanicity have moved in parallel and have been very similar.

  Similarly for ***binge drinking***, levels since 1993 have been fairly stable in large cities but rising in the nonmetropolitan areas. (This is true at all three grade levels.)

- ***Marijuana*** use showed a convergence among the three urbanicity groups by 1989 (Figure 5-11b). Use consistently had been correlated positively with community size. The greatest differences occurred in one of the peak years of usage, 1978. After that, both the absolute and the proportional differences diminished through 1992, and the more urban areas exhibited a greater decline. Starting in 1993, communities in all size categories showed a turnaround in marijuana use; in fact, the turnaround began a year earlier in the nonmetropolitan areas. As use has risen, slightly larger differences related to urbanicity appear to be emerging at all three grade levels, but overall the increase in marijuana use has been quite sharp in all strata at all three grade levels.

- In the last half of the 1970s, the use of ***opiates other than heroin*** was consistently highest in the large metropolitan areas and lowest in the nonmetropolitan areas. In recent years there has been no consistent difference among these groups.

- Between 1992 and 1995, there were increases in ***cigarette smoking*** in all three strata for all three grade levels. The increases were particularly sharp in the nonmetropolitan and smaller city strata. In 1997, use leveled or declined in the eighth and tenth grades in the large cities and the smaller cities.

- The remaining drugs show little systematic variation in trends related to population density.

Differences in Trends by Socioeconomic Status

The measure of socioeconomic status used in this study—namely, the average educational attainment level of the respondents' parents—was described in the previous chapter. Five different strata are distinguished and the students are sorted into those strata based on the educational level of their parents. It should be noted that the overall average educational level of parents has been rising; thus each of the five categories contains a slowly changing proportion of the sample. Figures 5-12a through 5-12f show trends for six selected measures of drug use. Trend data, by subgroup, for the remaining drugs may be found in Appendix D.

- In general there has been little change over time in the relationship between the socioeconomic status (SES) of the family of origin and prevalence rates for most of the drugs.

- ***Marijuana*** use, for example, has had little association with socioeconomic level throughout the life of the study, except that the lowest SES stratum consistently has had a slightly lower prevalence rate than all the others. (This may, in fact, be due as much to a difference in the ethnic composition of this stratum, as will be seen in the next section, as to SES differences.) All levels showed similar declines in use from the late 1970s through 1992 (Figure 5-12a), and all levels have shown comparable increases since 1992.

- ***Cocaine*** has shown the largest and most interesting change in its association with socioeconomic status (Figure 5-12b). From 1975 through 1981, a strong positive association evolved between cocaine use and SES, with the greatest increase in use occurring in the highest SES group and the least increase in the lowest SES group. From 1981 to 1985, use in the top SES levels declined, while use in the lowest SES group increased substantially between 1982 and 1985—an increase that likely reflected the introduction of the less expensive form of cocaine, ***crack***.

The net effect has been that, since 1985, there has been no systematic association between overall cocaine use and socioeconomic status. The strong positive association that existed for roughly eight years disappeared. All SES levels showed a substantial decrease in cocaine use between 1986 and 1991, with little differential change. In the upturn between about 1991 and 1997, some reversal in the relationship emerged, with the lowest SES group now having the highest use and vice versa. In the lower grades, since 1991 when data were first available, the use of both crack and other cocaine has been highest in the lowest SES level. Otherwise the differences among strata have been small. (This has also been true in twelfth grade for crack since 1992.)

- Except for the lowest SES group consistently being a bit lower in its use of ***LSD*** than the four other strata, there was little association at the twelfth-grade level between SES and the use of this drug over the interval from 1975, when the study began, through about 1984 (Figure 5-12c). As the overall usage level for LSD gradually increased after 1984, a modest positive association emerged, although it diminished some in degree by the mid-1990s. In eighth grade, it has been the lowest stratum that has had the highest usage level, with hardly any other differences. There have been practically no differences in tenth grade by socioeconomic status.

- There has been little difference across the five SES categories in reported use of ***inhalants*** (data not shown), although in twelfth grade the top two categories have tended to have the highest prevalence rate in recent years and the bottom category to have the lowest. There has been virtually no association in the lower grades. Most strata have shown parallel increases since 1983, and this has been the case for eighth and tenth graders, since 1991, when they were first surveyed.

- There has been little difference among the SES groups in their trends in ***amphetamine*** use (see Figure 5-12d). In recent years (1991 through 1995), the two or three highest SES groups had the lowest rates of amphetamine use. In earlier years (1976 through 1990), there was usually a slight curvilinear relationship, with the two lowest *and* the highest SES groups tending to be low in amphetamine use. Since 1992, increases in use have occurred in all strata. In eighth and tenth grades, amphetamine use generally has been negatively correlated with SES, and while the recent increases in use through 1995 or 1996 occurred in all groups, they were sharpest in the lower two strata.

- The picture for ***alcohol*** use among high school seniors is similar to the one described earlier for marijuana: that is, there has been little difference in the annual prevalence rates among the SES strata except that the lowest stratum has had a lower prevalence than all the others; and all strata have moved pretty much in parallel (data not displayed). The story for ***binge drinking*** is similar (Figure 5-12e). At the lower grade levels, however, the story is a bit different. Binge drinking generally has been inversely correlated with SES, and the association has been strongest in the eighth grade.

- Prior to 1981, ***daily use of cigarettes*** among twelfth graders generally was ordinally and inversely related to SES, with each successively higher SES group smoking less (Figure 5-12f). Between 1981 and 1990, this ordinal relationship diminished very substantially because (a) the two highest SES groups showed some gradual increase in use, (b) the next two strata remained unchanged, and (c) the lowest SES group showed a continuing decline in use, which brought it from the highest smoking stratum to the lowest (probably due to its racial composition, as will be discussed in the next section). The net result of that and other trends was that the SES differences narrowed. Since 1992 virtually all strata have shown an increase in daily smoking, with little difference as a function of SES except for the lowest stratum having the lowest rate of smoking. Also, in eighth and tenth grades all strata showed an increase in their ***30-day smoking*** rates from 1991 to 1996. The lowest SES stratum showed the least increase. In eighth grade, smoking has been consistently negatively correlated with SES.

Racial/Ethnic Differences in Trends

While the three major racial/ethnic groups examined here—whites, African Americans, and Hispanics—have quite different levels of use of some drugs, it appears that for almost all drugs use patterns show similar trends.[33] (Cigarette use is an exception, as discussed below.) Data have been examined here for these three groups using two-year moving averages of prevalence in order to provide smoother and more reliable trend lines. Even then, they tend to be a bit "bumpy," especially for Hispanics, for whom we have the least data and for whom there is a higher degree of clustering by school in the sample. See Appendix D for the racial/ethnic trend data on all classes of drugs.

- Figure 5-13a shows the trends in annual ***marijuana*** use for the three groups and illustrates that they have generally moved in parallel—particularly during the long decline phase. Over the past several years, all three groups have shown a rise in marijuana use at all three grade levels. In fact, African Americans, who started out with considerably lower usage rates, have greatly narrowed that gap during this period of upturn. They also are the only group that has shown a leveling of its use in the last year or two.

  In the two lower grades (data not shown), there has been a sharp upturn in marijuana use among all three racial/ethnic groups as well. In tenth grade, as in twelfth, a sharper increase among African Americans has narrowed the gap. While the trends for whites and Hispanics are quite parallel to each other, their relative positions change across grade levels. In eighth grade, Hispanics have the highest rate of use while whites and African Americans are similar and have a considerably lower rate. By tenth grade, the whites have rates of use almost equivalent to Hispanics, and the African Americans have lower rates than either (although that gap has diminished some). By twelfth grade, whites consistently have the highest rates, Hispanics somewhat lower ones, and African Americans the lowest. (Again, these differences have been diminishing in recent years. We believe that differential dropout rates, with Hispanics having the highest rate, may account for much or all of these shifting comparisons across the three grade levels.)

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[33] An article looking at a larger set of ethnic groups used groupings of respondents from adjacent five-year intervals to get more reliable estimates of trends. See Bachman, J.G., Wallace, J.M. Jr., O'Malley, P.M., Johnston, L.D., Kurth, C.L., & Neighbors, H.W. (1991). Racial/ethnic differences in smoking, drinking, and illicit drug use among American high school seniors, 1976-1989. *American Journal of Public Health, 81*, 372-377.

- Figure 5-13a also shows the long-term trends for annual ***cocaine*** use among twelfth graders. It clearly shows that the rise in cocaine use occurred more sharply among whites and Hispanics than among African Americans. The decline among African Americans appears to have begun earlier but, of perhaps greatest importance, all three groups participated in the sustained decline in cocaine use after 1986. While a little difficult to discern in Figure 5-13a, twelfth-grade Hispanics halted their decline at a higher level than whites and since then have held fairly steady, with a slight increase in use since 1996, whereas use among whites dropped further, but began to rise after 1993. Cocaine use by African Americans fell to very low levels and has stabilized there.

  At the twelfth-grade level there was a crossover of whites, who used to have a slightly higher prevalence of use of ***cocaine powder***, and Hispanics, who now have the highest prevalence. Hispanics reached higher levels of use during the peak years of the cocaine epidemic. Also, use among whites fell more sharply between the late 1980s and the early 1990s. Use among African Americans dropped through about 1990 and then stabilized at a very low rate.

  In the two lower grades, ***cocaine*** use rose the most among Hispanics from 1991 through 1996, whereas over the same interval, use rose some among whites and very little among African Americans. Hispanics have had considerably higher rates of use than the other two groups at both grade levels, though they have shown some decline in the past year or two. This is also true for the two components, ***crack*** and ***cocaine powder***. Indeed, at the lower two grade levels, the trends for these two components are very similar, though the rates of use for crack are generally lower than for cocaine powder.

- At the twelfth-grade level, the rise in reported ***inhalant*** use (unadjusted for the under-reporting of nitrites) occurred about equally among whites and Hispanics from 1975 through 1995, although Hispanics consistently had a lower rate of use. African Americans, on the other hand, showed practically no increase in their already low levels of use. They now have an annual prevalence that is less than a quarter that of whites. A similar picture emerges in eighth and tenth grades, except that the increase in recent years among Hispanics and whites has been even steeper than the increases in twelfth grade. It is clear from the data on both levels and trends that inhalant drugs have not been popular with African American youngsters. Another class of drugs that has been similarly unpopular with them is hallucinogens.

- With regard to ***LSD*** and ***hallucinogens*** in general, African Americans have consistently had far lower rates of use than whites or Hispanics. Both whites and Hispanics have shown sharp increases in LSD use among seniors (since 1989), among tenth graders (since 1992), and among eighth graders (since 1992), for whites only. Whites have had the highest rate of hallucinogen use for more than 20 years at the twelfth-grade level. In the tenth grade, whites also have tended to have a slightly higher level of LSD use than Hispanics, but there has not been a consistent difference in eighth grade.

- The sharp decline in the use of ***stimulants,*** which began among twelfth graders in 1982, narrowed the differences among the three ethnic groups somewhat. The decline was greatest among whites, who started with the highest rates, and least among African Americans, who started with the lowest rates. Hispanics have been about midway between the other two groups. Since 1992, there has been some increase in stimulant use among whites and Hispanics, but little among African Americans.

- Use of ***barbiturates, tranquilizers***, and ***opiates other than heroin*** converged among seniors in the three racial/ethnic groups as use of these drugs declined over a fairly long period. In general, whites consistently had the highest usage rates in senior year and also the largest declines; African Americans had the lowest rates and, therefore, the smallest absolute declines. During the period of increase in the use of these drugs in the first half of the 1990s, whites showed the greatest increase and African Americans the least.

- Like most of the illicit drugs, the ***current daily alcohol*** rates are lowest for African Americans (data not shown). They have changed very little during the life of the study. Whites and Hispanics have daily usage rates now that are about equivalent, although whites had higher rates in the period 1977 through 1985.

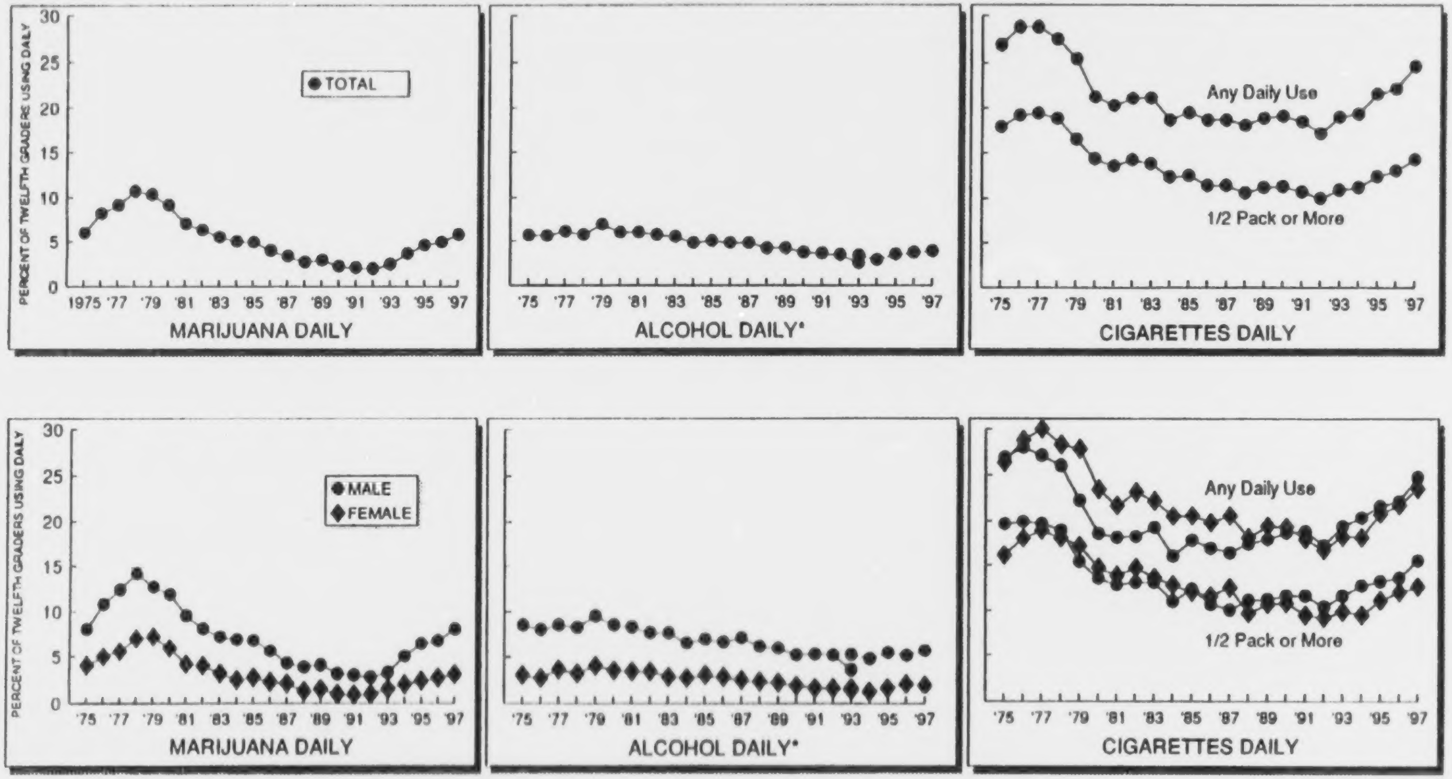
  Among seniors there are large racial/ethnic differences in ***binge drinking*** (see Figure 5-13b), with African Americans consistently having a rate below 20% (and now at 13%). In comparison, the rates for whites rose to a peak of around 45% in the early 1980s before declining to just over 30% a decade later and then climbing to 35% in 1997. Hispanics have been in the middle and also had a gradual decline in binge drinking during the 1980s. Hispanics showed some decline in the 1980s, but less than that of whites, and also showed less increase in the 1990s. At the eighth-grade level, the three ethnic groups have been moving pretty much in parallel (with Hispanics having considerably higher rates than the other two groups); but at the tenth-grade level, the rate for African Americans has been dropping slowly while the rates for the other two groups have been increasing gradually.

- ***Cigarette smoking*** shows differential trends that are quite interesting. The three groups had daily smoking rates that were not dramatically different in the late 1970s (Figure 5-13b). All three groups showed declines between 1977 and 1981, with the declines somewhat stronger for African Americans and Hispanics, clearly leaving whites with the highest smoking rates by 1981. After that, African Americans exhibited a consistent and continuing decline through 1993, while rates among whites increased gradually and rates among Hispanics stayed level. By 1991, African Americans had a rate of daily smoking that was one-fourth that of whites. Since 1992, current (30-day) smoking has been up among all three ethnic groups. In the eighth and tenth grades, all three ethnic groups showed a recent sharp rise in use, though all showed some signs of leveling by 1997.

FIGURE 5-5

Trends in Thirty-Day Prevalence of Daily Use of Marijuana, Alcohol, and Cigarettes for Twelfth Graders

by Total and by Sex



NOTE: Daily use for alcohol and marijuana is defined as use on 20 or more occasions in the past thirty days. Daily use of cigarettes is defined as smoking one or more cigarettes per day in the past thirty days.

*The dotted lines connect percentages which have been adjusted. See text for details.

FIGURE 5-6

Trends in Two-Week Prevalence of Heavy Drinking Among Twelfth Graders by Sex

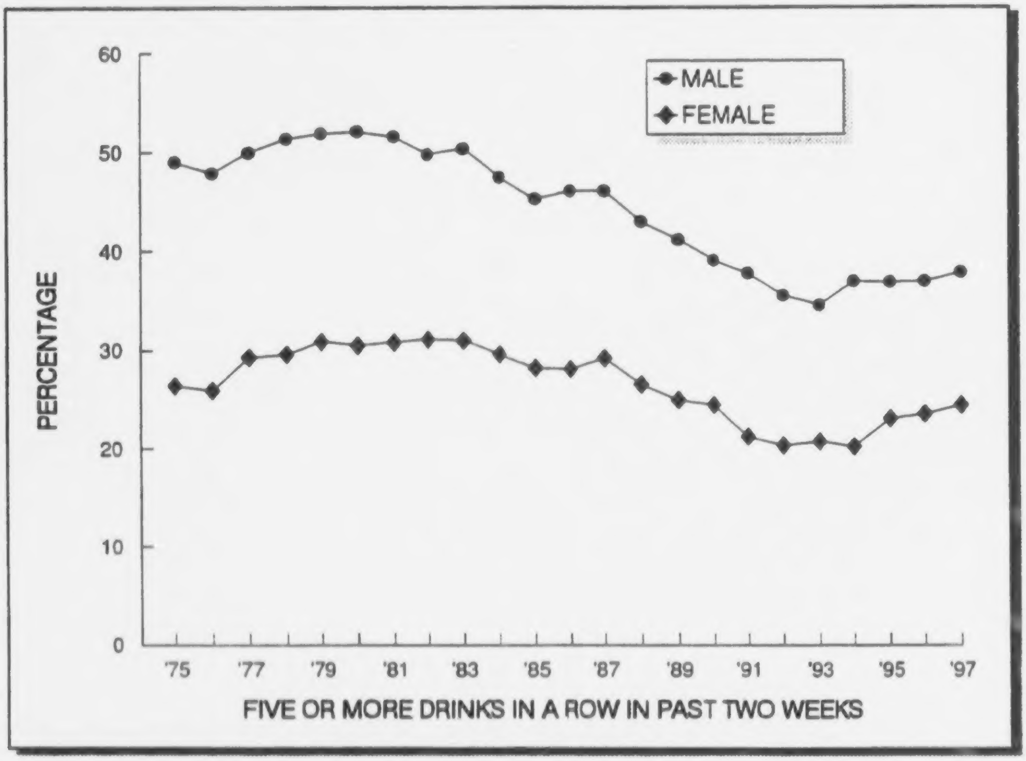
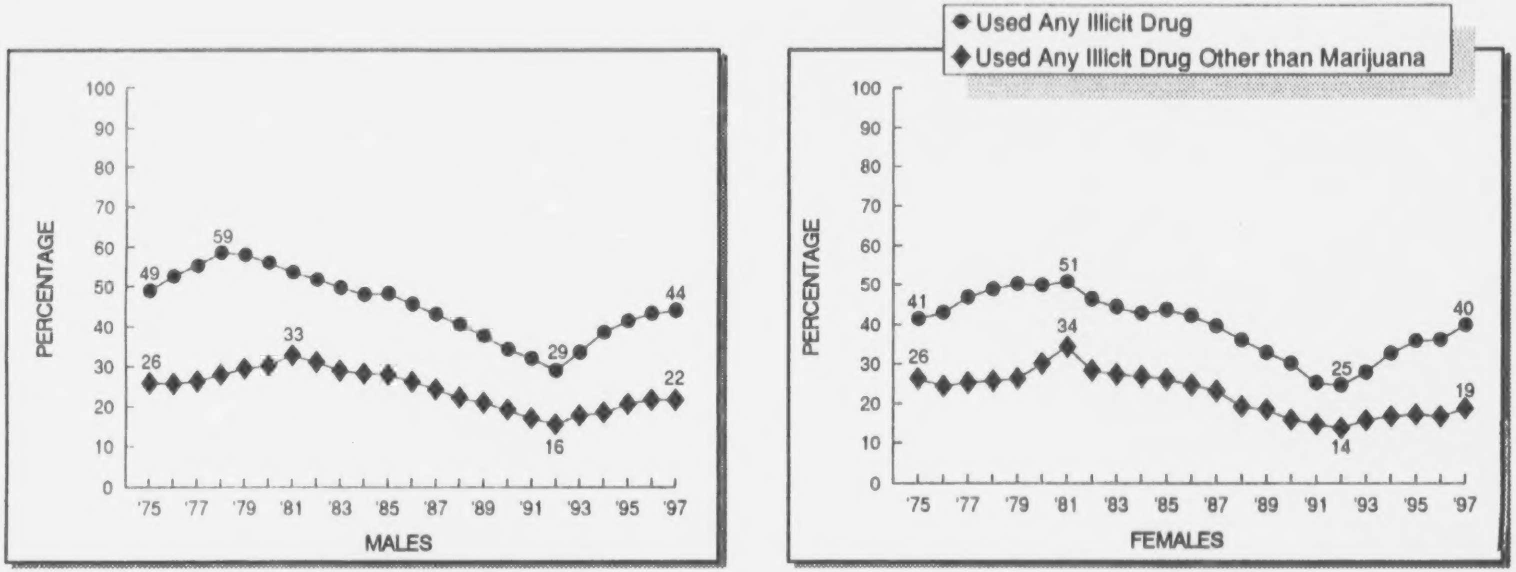


FIGURE 5-7

Trends in Annual Prevalence of an Illicit Drug Use Index for Twelfth Graders

by Sex

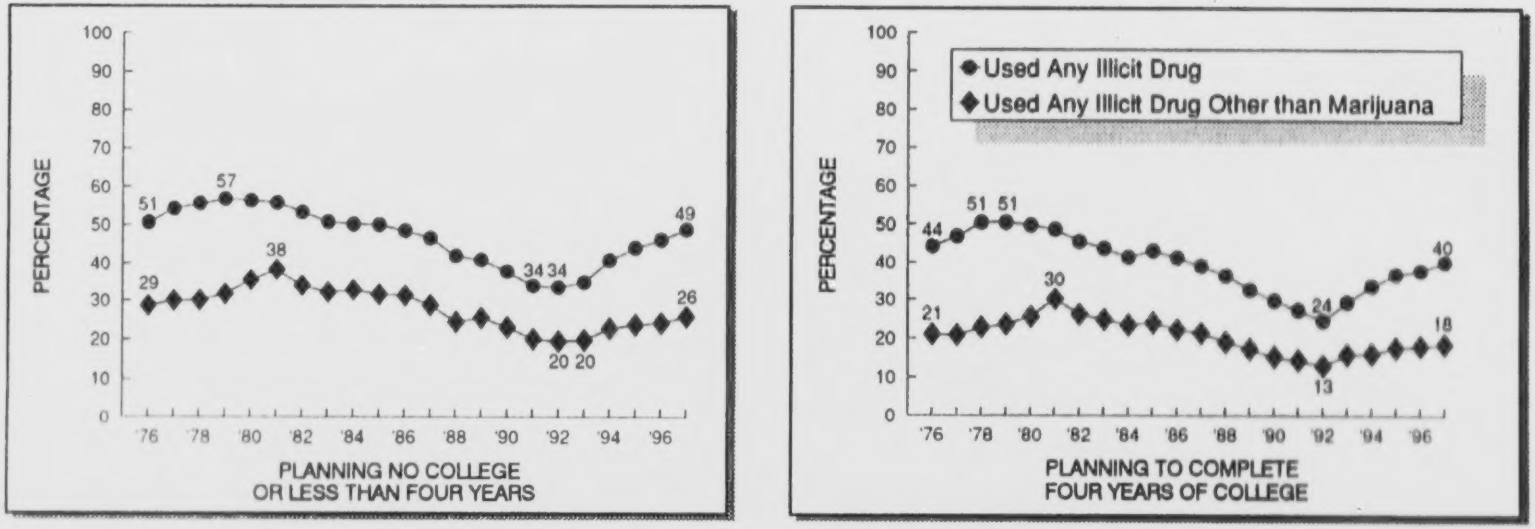


NOTE: See Figure 5-3 for relevant footnotes.

FIGURE 5-8

Trends in Annual Prevalence of an Illicit Drug Use Index for Twelfth Graders

by College Plans



NOTE: See Figure 5-3 for relevant footnotes.

FIGURE 5-9

Trends in Thirty Day Prevalence of Cigarette Use for Eighth, Tenth, and Twelfth Graders by College Plans

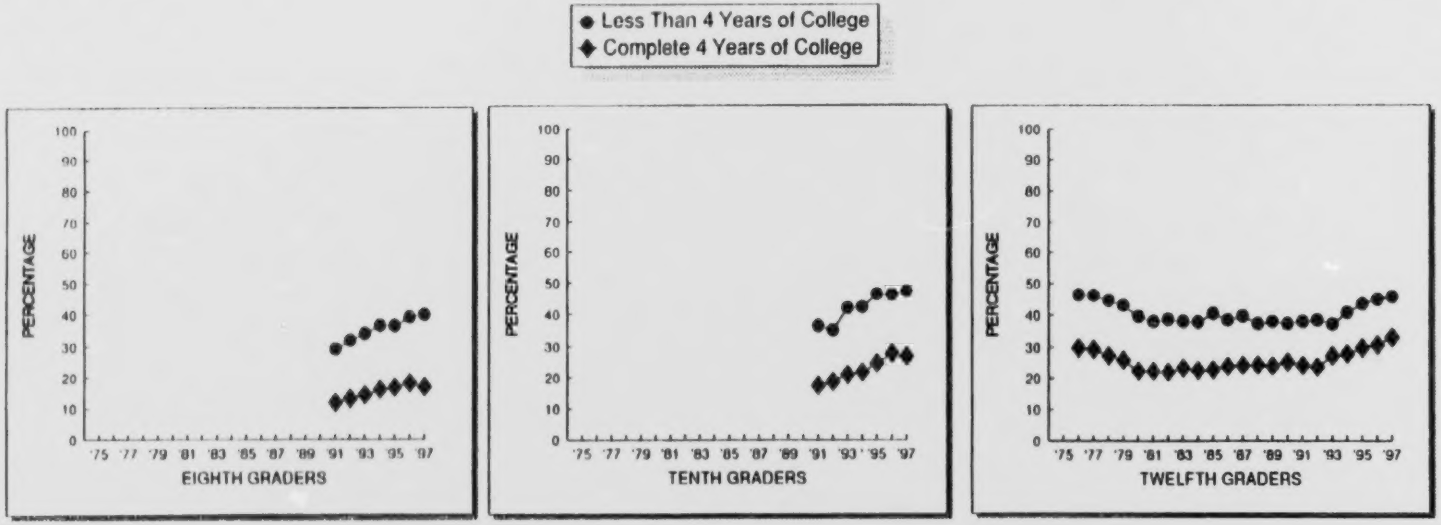
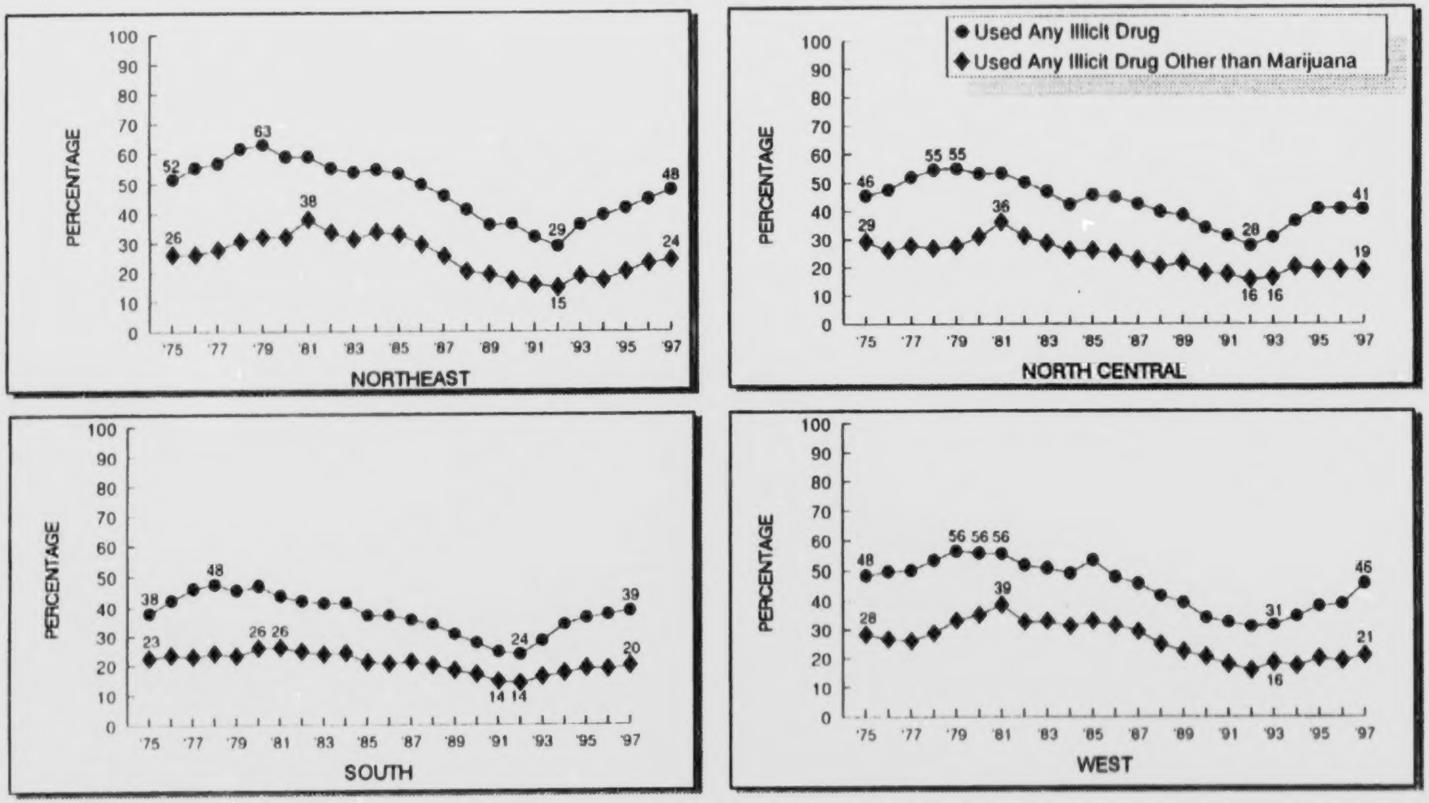


FIGURE 5-10a

Trends in Annual Prevalence of an Illicit Drug Use Index for Twelfth Graders
by Region of the Country



NOTE: See Figure 5-3 for relevant footnotes.

FIGURE 5-10b

Trends in Lifetime Prevalence of Cocaine Use for Twelfth Graders
by Region of the Country

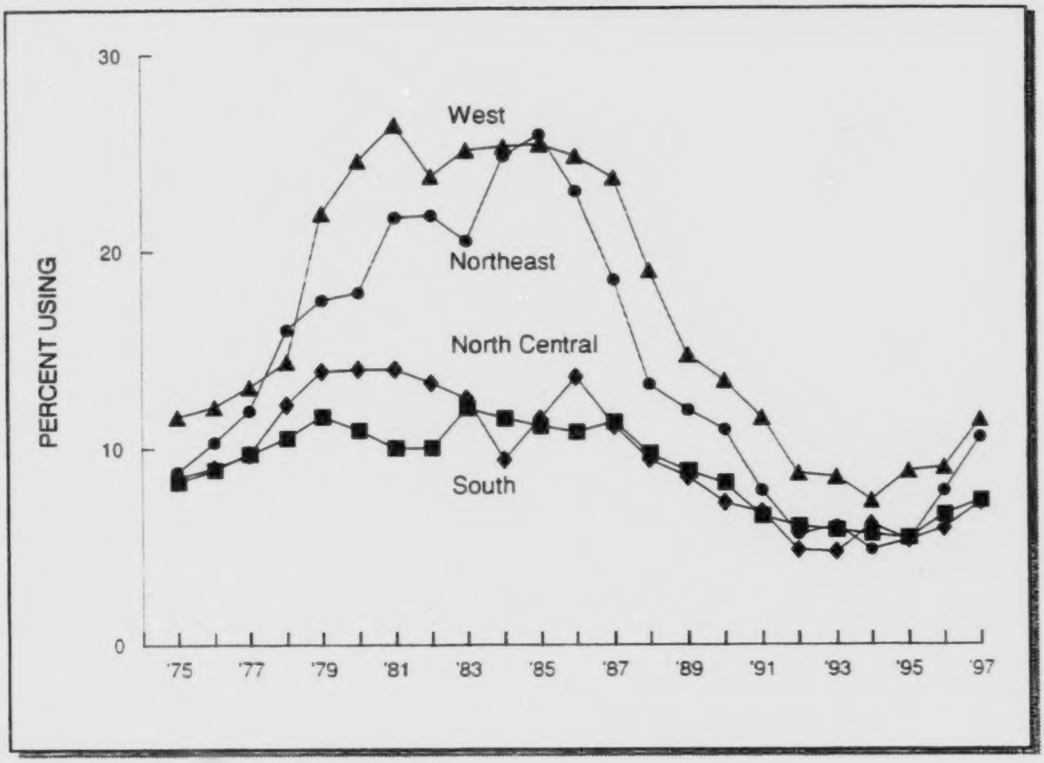
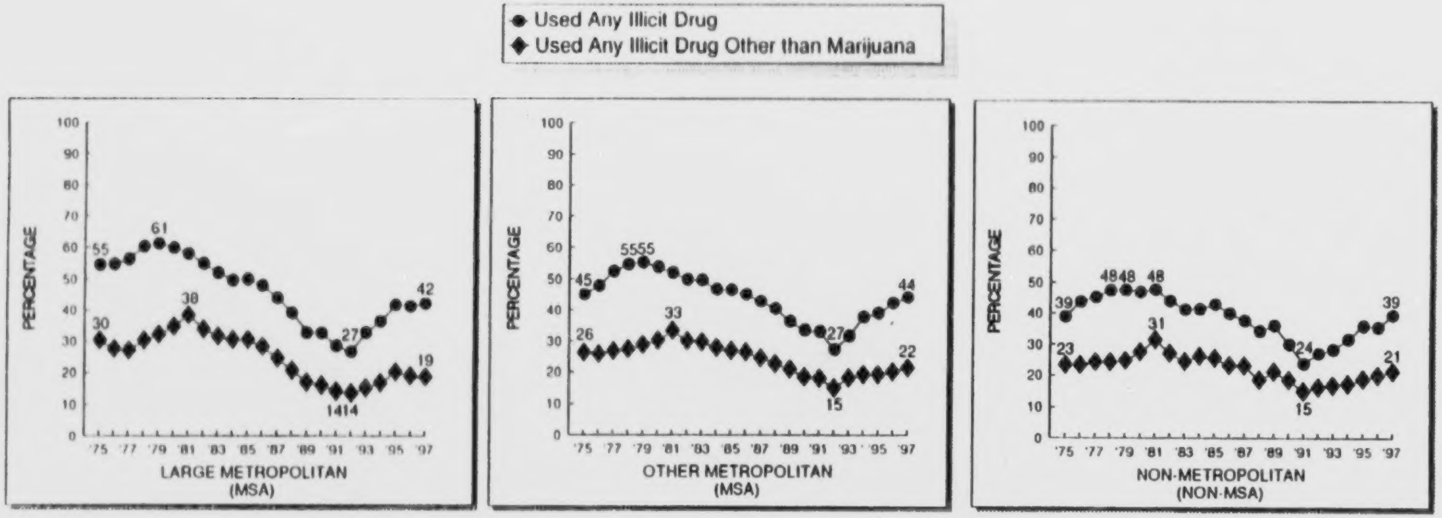


FIGURE 5-11a

Trends in Annual Prevalence of an Illicit Drug Use Index for Twelfth Graders
by Population Density

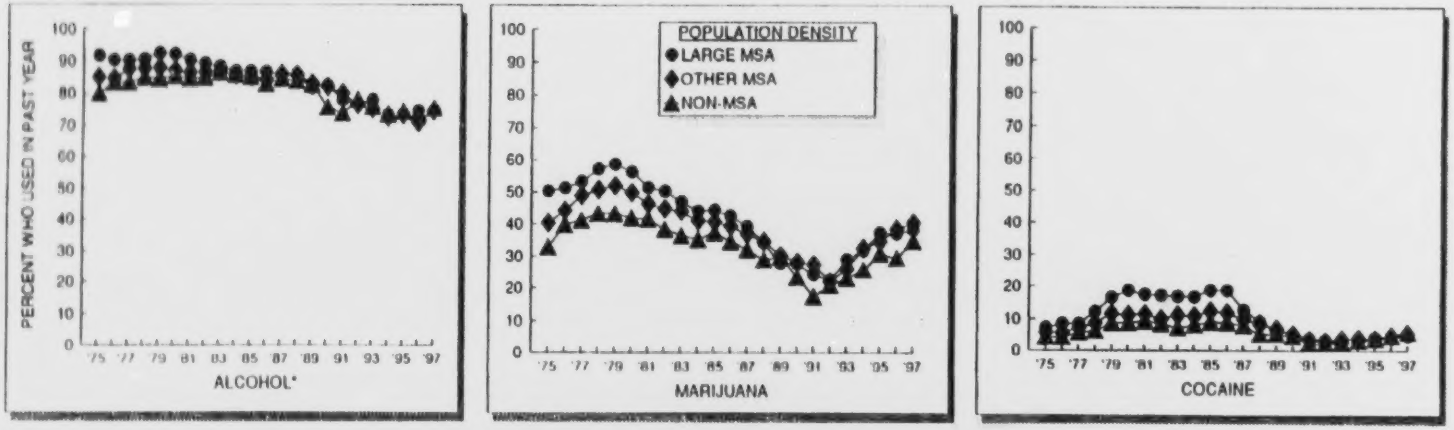


NOTE: See Figure 5-3 for relevant footnotes.

FIGURE 5-11b

Trends in Annual Prevalence of Alcohol, Marijuana, and Cocaine Use for Twelfth Graders

by Population Density



*1993 data points are based on the data from the questionnaire forms containing the original wording of the alcohol questions, from 1994 on data points are based on the revised alcohol questions. See text for details.

FIGURE 5-12a

Marijuana: Trends in Annual Prevalence by Average Education of Parents for Twelfth Graders

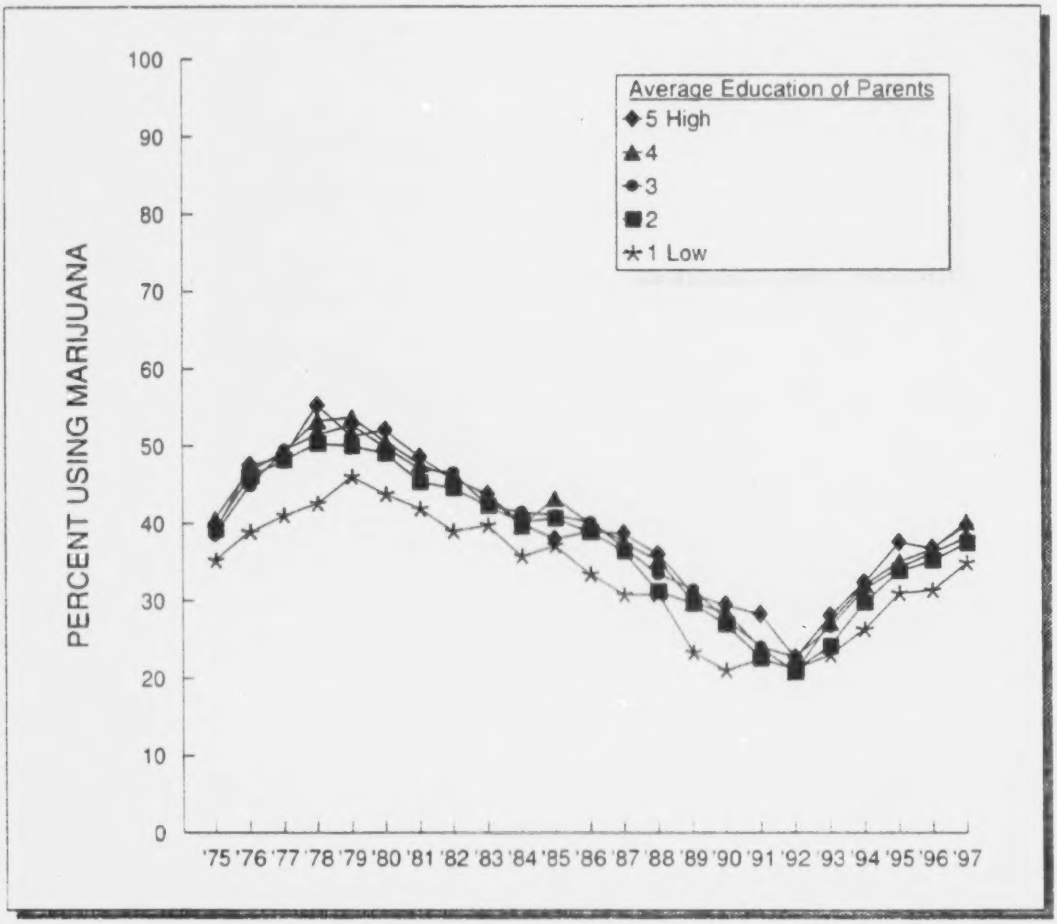


FIGURE 5-12b

Cocaine: Trends in Annual Prevalence by Average Education of Parents for Twelfth Graders

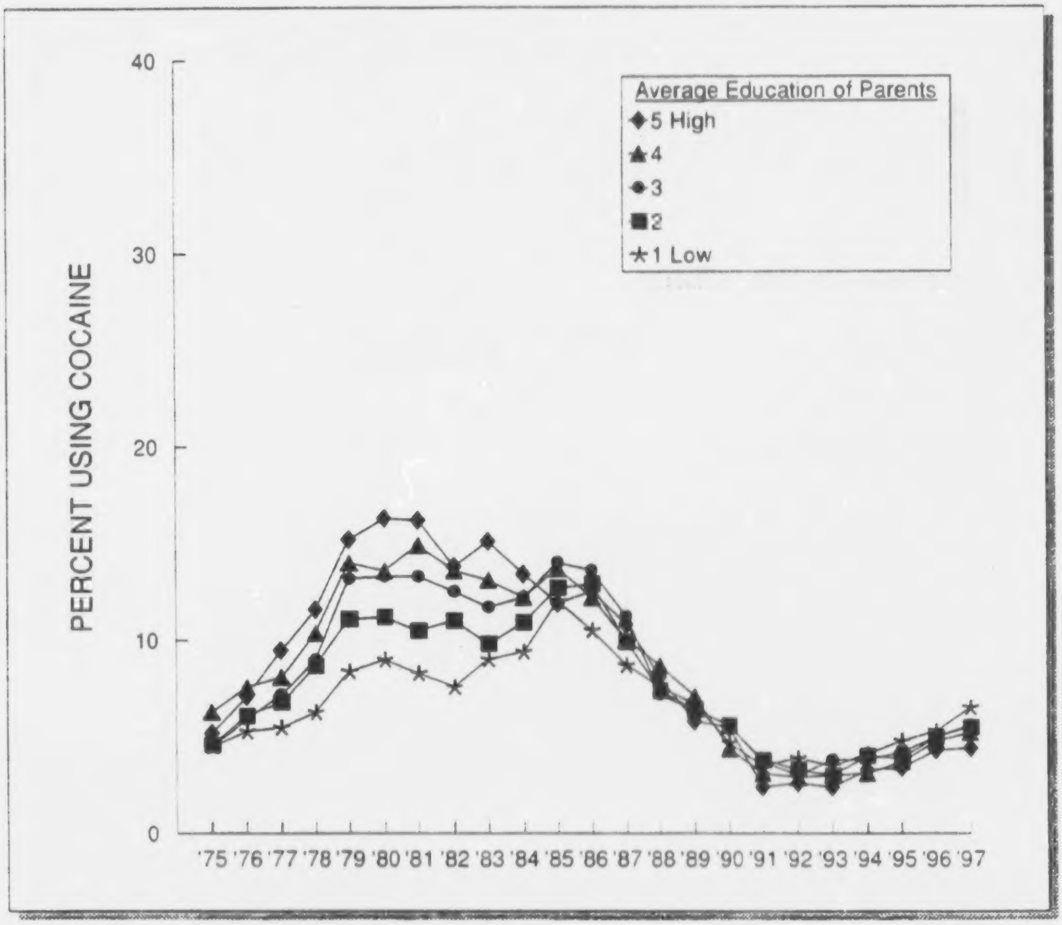


FIGURE 5-12c

LSD: Trends in Annual Prevalence by Average Education of Parents for Twelfth Graders

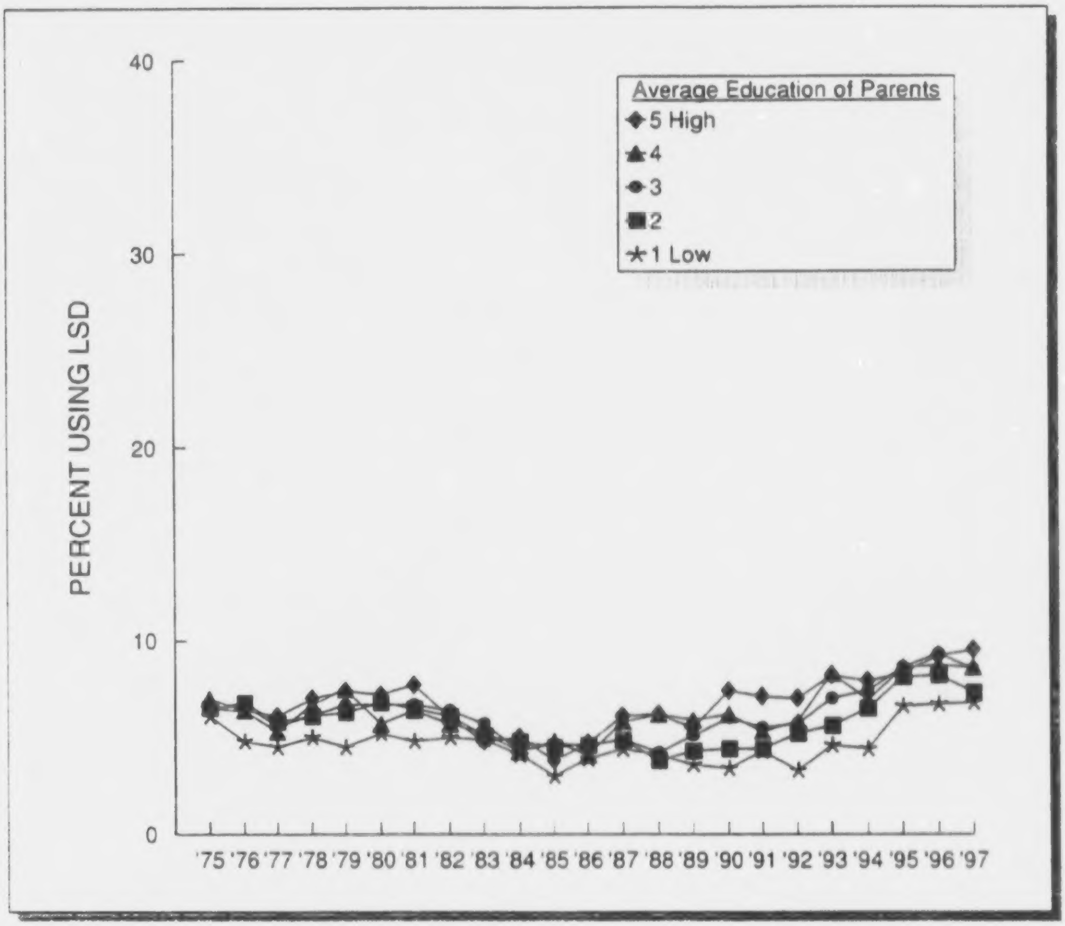


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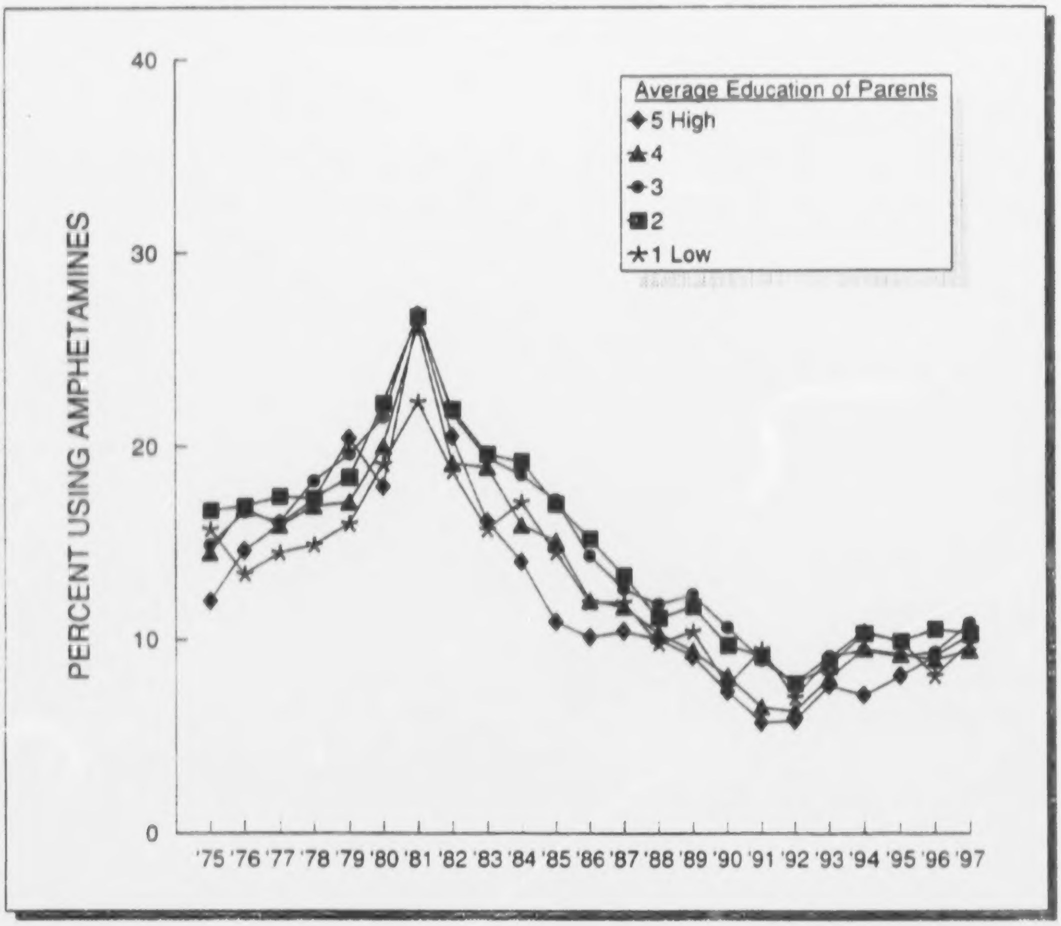
FIGURE 5-12d

Amphetamines: Trends in Annual Prevalence by Average Education of Parents for Twelfth Graders



NOTE: Beginning in 1982 the question about stimulant use (i.e., amphetamines) was revised to get respondents to exclude the inappropriate reporting of non-prescription stimulants. The prevalence rate dropped slightly as a result of this methodological change.

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FIGURE 5-12e

Heavy Drinking: Trends in Two-Week Prevalence of 5 or More Drinks in a Row by Average Education of Parents for Twelfth Graders

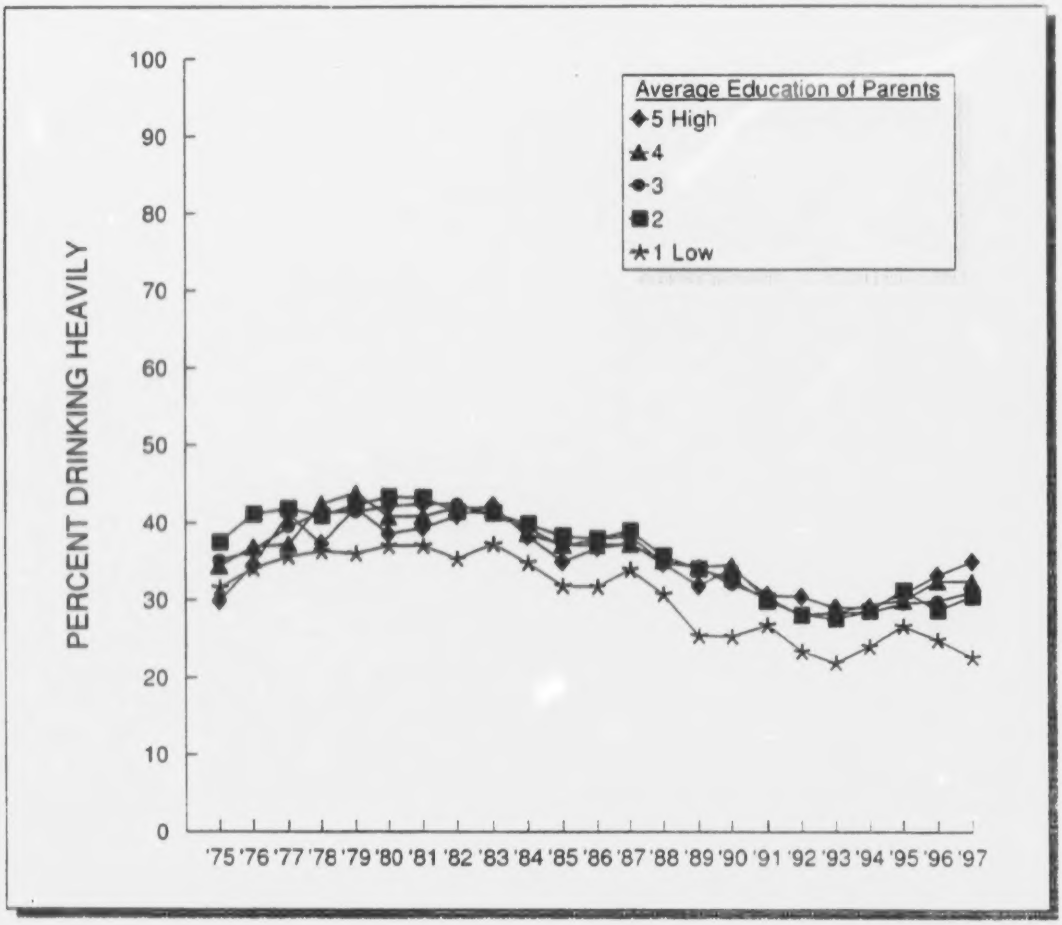

FIGURE 5-12f

Cigarettes: Trends in Daily Prevalence by Average Education of Parents for Twelfth Graders

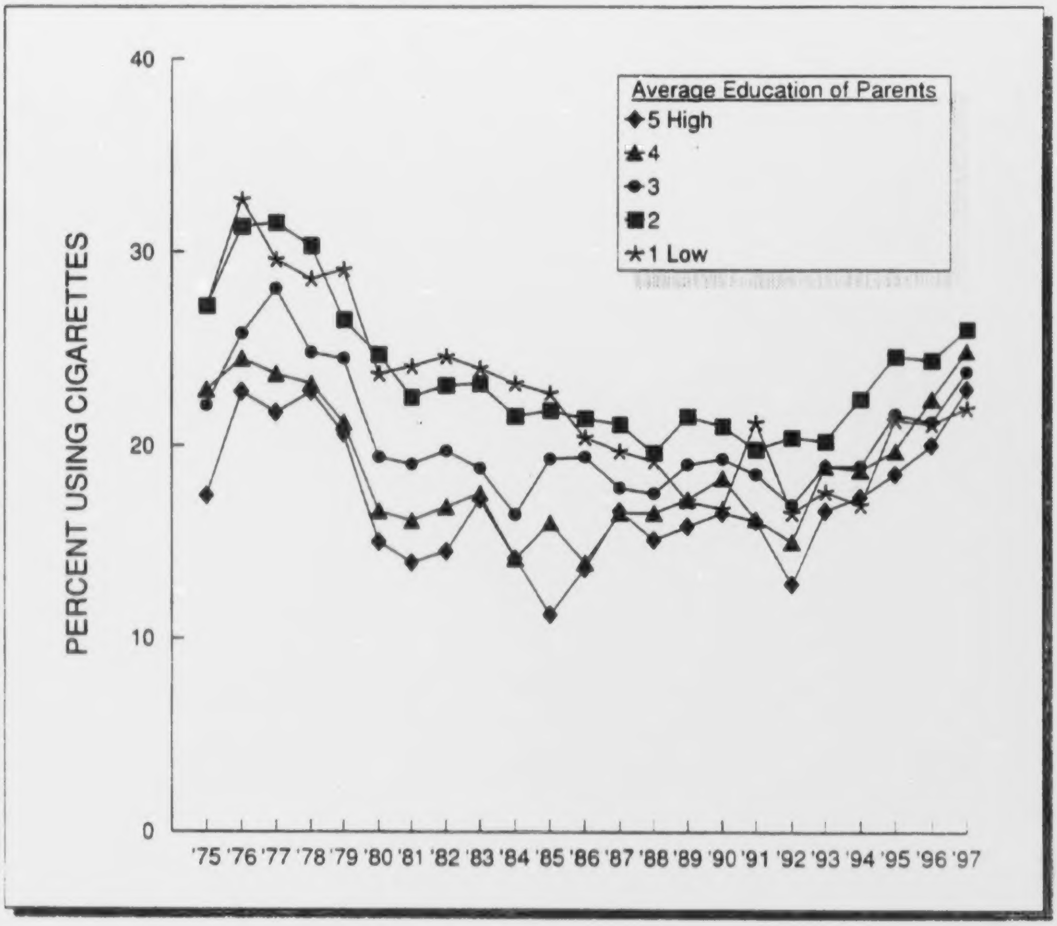

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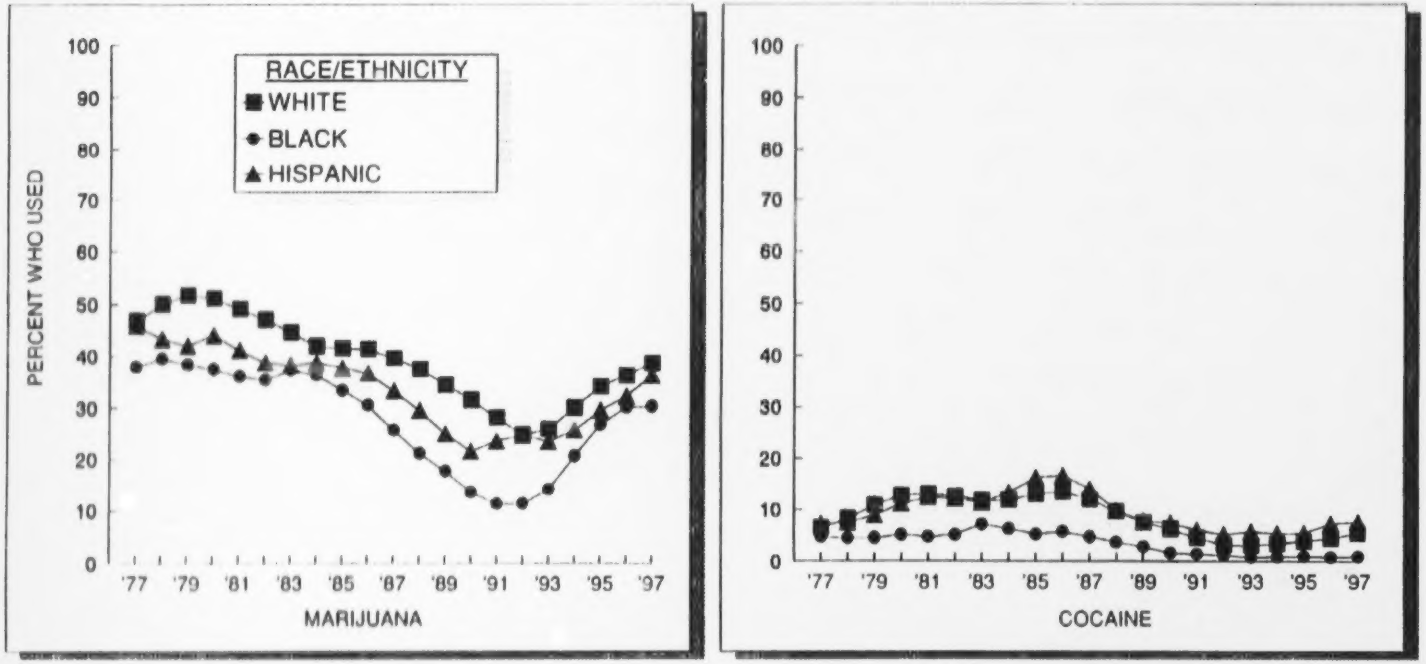
FIGURE 5-13a

Trends in Annual Prevalence of Marijuana and Cocaine Use for Twelfth Graders

by Race/Ethnicity

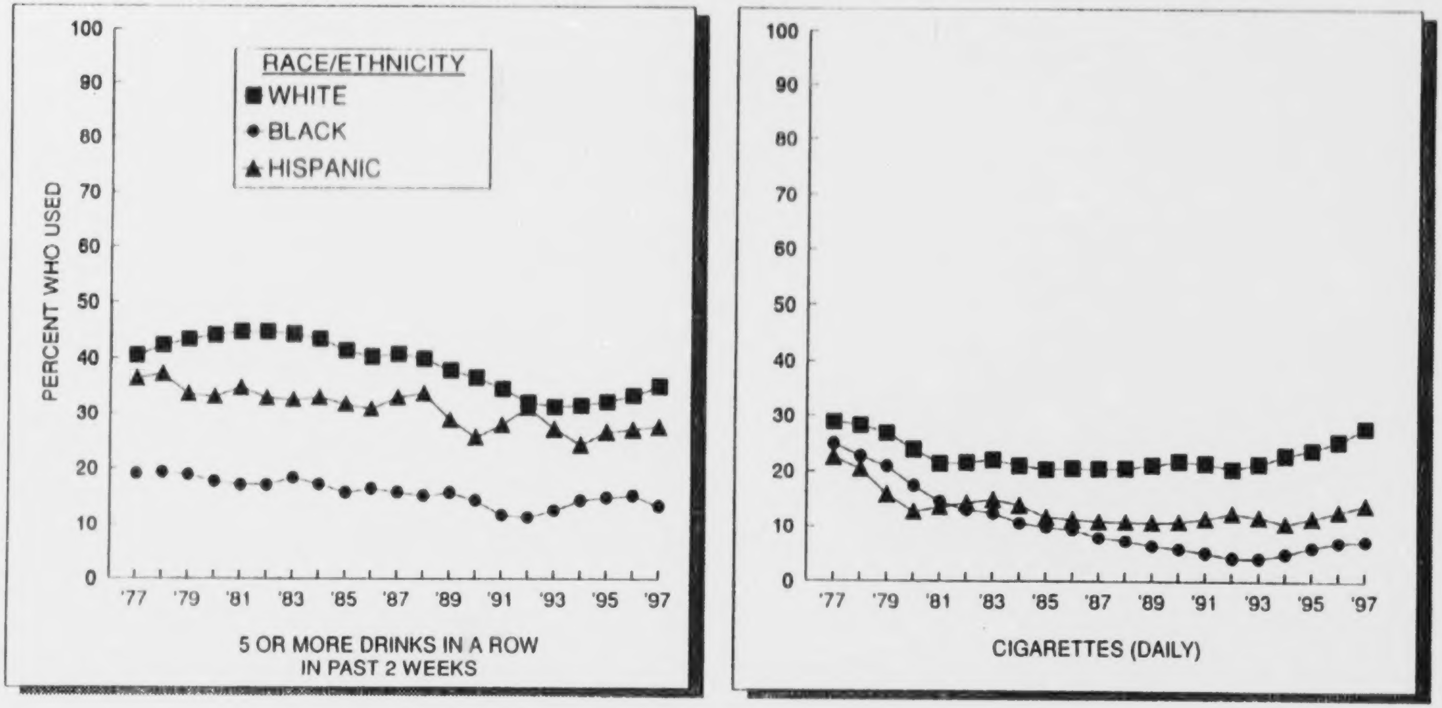
(Two-year moving average*)



*Each point plotted here is the mean of the specified year and the previous year.

FIGURE 5-13b

Trends in Prevalence of 5 or More Drinks in a Row in the Past 2 Weeks and Daily Use of Cigarettes for Twelfth Graders
by Race/Ethnicity
(Two-year moving average*)



*Each point plotted here is the mean of the specified year and the previous year.

Chapter 6

USE AT EARLIER GRADE LEVELS

It is important to know the age at which young people begin to use various drugs, in part because that information provides a guide to the timing and nature of interventions, including media campaigns, in the school, the home, and the larger society. Any such intervention is likely to be considerably less effective in preventing drug use if it is administered after the ages of peak initiation. It also may be less effective if it substantially precedes this decision-making period. We know that drugs vary in their ages of peak initiation and that there tends to be a certain progression, beginning with drugs that are seen as the least risky, deviant, or illegal and progressing toward those that are more so.

Age of initiation has been ascertained from seniors by a set of questions that have been included in the study since its inception in 1975. The results have been used in this series of monographs to give a retrospective view of trends in lifetime prevalence at earlier grade levels. Because of the long time period these trends span, we continue to include here the series of figures based on seniors' responses, even though we now measure drug usage rates directly from eighth and tenth graders. We have also included retrospective figures for grade of first use for the eighth graders.

One would not necessarily expect today's eighth, tenth, and twelfth graders to give the same retrospective prevalence rate for a drug, even for a given grade level (say by sixth grade), because there are a number of differences among the three groups. These differences can be summarized as follows:

1. The lower grades contain the eventual school dropouts, while twelfth grade does not. The lower grades also have lower absentee rates. For any given year, both factors should cause the prevalence rates derived directly from eighth graders to be higher for a given calendar year than the retrospective prevalence rates for eighth grade derived from the same cohort of students in tenth grade or in twelfth grade.

2. Each class cohort was in eighth grade in a different year, so any broad secular (historical) trend in the use of a drug could contribute to differences in respondents' reports of their experiences when they were in eighth grade.

3. The eighth, tenth, and twelfth graders are in three different class cohorts, so any lasting differences among cohorts could contribute to a difference at any grade level, including eighth grade.

There are also two types of method artifacts that could explain observed differences in the retrospective reports of use by eighth, tenth, and twelfth graders:

1. Memory errors are more likely for the older respondents. They may forget that an event ever occurred (although this is unlikely for use of drugs) or they may not accurately remember when an event occurred. For example, an event may be

remembered as having occurred more recently than it actually did—a kind of "forward telescoping" of the recalled timing of events.

2. The definition of the eligible event may change as a respondent gets older. Thus, an older student may be less likely to include an occasion of taking a sip from someone's beer as an occasion of alcohol use, or an older student may be more likely to exclude (appropriately) an over-the-counter stimulant when asked about amphetamine use. While we attempt to ask the questions as clearly as possible, some of these drug definitions are fairly subtle and are likely to be more difficult for the younger respondents. Indeed, we have omitted from this report eighth and tenth graders' data on their use of barbiturates and other opiates precisely because we judged them to contain erroneous information.[34]

INCIDENCE OF USE BY GRADE LEVEL

Tables 6-1a through 6-1c give the retrospective initiation as reported by eighth, tenth, and twelfth graders, respectively. Obviously, the older students have a longer age span over which they can report initiation. Table 6-1d puts together the retrospective initiation rates from all three sets of respondents in order to facilitate a comparison of reported initiation rates by particular grades.

The set of questions from which the data are derived have a common stem: "When (if ever) did you FIRST do each of the following things? Don't count anything you took because a doctor told you to." The first event is "smoke your first cigarette," followed by "smoke cigarettes on a daily basis," followed by "try an alcoholic beverage--more than a just a few sips," etc. The answer alternatives are stated in terms of grade level.

- Eighth-, tenth-, and twelfth-grade students all retrospectively reported very low usage rates (1% or lower) by the end of sixth grade for ***LSD, crack, cocaine powder, heroin*** and ***steroids***. Fewer than 2% reported any use of ***hallucinogens, cocaine***, or ***tranquilizers***, and fewer than 3% reported any use of ***stimulants***. ***Marijuana*** was tried by no more than 7% of youngsters by the end of sixth grade, or about one in every 14. These findings are consistent with past reports based on the retrospective data from twelfth graders, providing greater confidence in those retrospective reports (see Table 6-1d).

- In general, the legal drugs (***alcohol*** and ***tobacco***) are the most likely to be initiated at an early age, with ***inhalants*** and ***marijuana*** likely to come next.

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[34] We have found that follow-ups of high school seniors into young adulthood lead to a higher recanting rate for the psychotherapeutic drugs, in contrast to the illegal drugs, which we interpret as reflecting, in part, a better understanding of the distinctions between prescription and non-prescription drugs in young adulthood. See Johnston, L.D. & O'Malley, P.M. (1997). The recanting of earlier reported drug use by young adults. In L. Harrison (Ed.), *The validity of self-reported drug use: Improving the accuracy of survey estimates* (pp. 59-80). (NIDA Research Monograph 167). Rockville, MD: National Institute on Drug Abuse.

- Based on the data from eighth graders (Table 6-1a), the peak years for initiation of ***cigarette*** smoking appear to be in the sixth and seventh grades (26%)—or between ages 11 and 12—but a considerable number initiated smoking even earlier. In fact, 16% of the 1997 eighth-grade respondents reported having had their first cigarette by fifth grade. ***Daily smoking*** appears to develop primarily in grades 8 through 11 (see Table 6-1c).

  Because educational attainment is very highly correlated with smoking, the differential inclusion of eventual dropouts could account for much of the difference between sixth-grade smoking rates derived from eighth graders (28%) and those derived from twelfth graders (15%). In addition, teen smoking rates rose sharply in the interval between 1993, when today's twelfth graders were in eighth grade, and 1997.

- ***Smokeless tobacco*** use also tends to be initiated quite early, as Tables 6-1a through 6-1c illustrate, with grades 7 through 10 tending to show the peak rates of initiation.

- ***Inhalant*** use tends to occur early, with peak initiation rates in grades 6 through 9. Among eighth-grade respondents in 1997, some 7% had already tried inhalants by the end of the fifth grade.

  Of the illicit drugs, only ***inhalants*** show very large differences between the grade levels responding. While only 1.5% of the twelfth graders in 1997 reported using inhalants by the end of sixth grade, a much higher 11.6% of the 1997 eighth graders reported such use by sixth grade. Although any of the explanations offered earlier might explain these differences, we believe that early inhalant use may be associated with dropping out and, also, that the use of the types of inhalants (glues, aerosols, and butane) generally used at younger ages has been on the rise.

- For ***alcohol***, we are inclined to rely on the data from seniors, which suggest that the peak years of initiation are in seventh through ninth grade. While the first occasion of ***drunkenness*** is most likely to occur in grades 7 through 10, some 7% of 1997 eighth graders actually reported having been drunk by the end of sixth grade.

  Alcohol use by the end of sixth grade is retrospectively reported by 28% of the 1997 eighth graders but by only 10% of the 1997 twelfth graders. Several factors may contribute to this difference. One is that eventual dropouts may be more likely than average to drink at an early age. Another is related to the issue of what is meant by "first use." The questions for all grades refer specifically to the first use of "an alcoholic beverage—more than just a few sips," but it is likely that the older students (twelfth graders) are more inclined to report only use that is not adult-approved and not to count having less than

TABLE 6-1a

Incidence of Use for Various Drugs, by Grade
Eighth Graders, 1997

(Entries are percentages)

Grade in which drug was first used	Marijuana	Inhalants	Hallucinogens	LSD	Cocaine	Crack	Coke Powder	Heroin	Stimulants	Tranquilizers	Alcohol	Been Drunk	Cigarettes	Cigarettes (Daily)*	Smokeless Tobacco	Steroids
4th (or below)	0.9	3.5	0.3	0.1	0.3	0.2	0.1	0.1	0.6	0.2	8.3	1.2	7.8	0.5	2.2	0.2
5th	1.4	3.0	0.4	0.2	0.2	0.1	0.1	0.1	0.4	0.3	7.6	1.6	8.0	1.0	2.4	0.2
6th	4.2	5.1	0.8	0.7	0.6	0.5	0.4	0.2	1.8	0.9	12.0	4.3	12.4	2.5	4.3	0.2
7th	9.0	5.7	2.1	1.9	1.5	1.0	1.3	0.9	4.8	1.4	16.7	9.5	13.8	4.9	5.2	0.7
8th	7.1	3.7	1.9	1.8	1.8	1.0	1.5	0.7	4.8	2.0	9.3	8.6	5.3	3.1	2.6	0.5
Never used	77.4	79.0	94.6	95.3	95.6	97.3	96.5	97.9	87.7	95.2	46.2	74.8	52.7	87.9	83.2	98.2

NOTES: All drugs were asked about in all four forms except for the following: hallucinogens, LSD, heroin, stimulants, tranquilizers, and smokeless tobacco, which were asked about in two forms only. The approximate N for all forms was 18,600.

SOURCE: The Monitoring the Future Study, the University of Michigan.

*Data based on the percentage of regular smokers (ever).

TABLE 6-1b

Incidence of Use for Various Drugs, by Grade Tenth Graders, 1997

(Entries are percentages)

Grade in which drug was first used	Marijuana	Inhalants	Hallucinogens	LSD	Cocaine	Crack	Coke Powder	Heroin	Stimulants	Tranquilizers	Alcohol	Been Drunk	Cigarettes	Cigarettes (Daily)*	Smokeless Tobacco	Steroids
4th (or below)	0.8	1.7	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	5.4	1.1	5.7	0.3	2.7	0.1
5th	0.6	1.2	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.2	3.3	0.9	5.6	0.5	2.1	0.0
6th	2.4	2.2	0.1	0.1	0.1	0.0	0.1	0.1	0.7	0.2	6.7	2.6	9.5	1.5	2.7	0.1
7th	6.0	3.5	0.8	0.8	0.6	0.4	0.5	0.3	1.6	0.6	12.6	6.1	12.3	3.6	4.7	0.3
8th	10.9	4.3	2.4	2.0	1.3	0.7	1.0	0.4	4.0	1.7	18.3	12.4	13.5	5.4	5.8	0.3
9th	14.9	4.0	4.5	4.2	2.7	1.3	2.3	0.7	6.4	2.9	18.8	17.5	10.2	7.1	5.7	0.7
10th	6.7	1.5	2.5	2.3	2.2	1.0	2.0	0.6	4.0	1.5	6.9	8.8	3.4	3.9	2.7	0.4
Never used	57.7	81.7	89.5	90.5	92.9	96.4	93.9	97.9	83.0	92.7	28.0	50.6	39.8	77.7	73.7	98.0

NOTES: All drugs were asked about in all four forms except for the following: hallucinogens, LSD, heroin, stimulants, tranquilizers, and smokeless tobacco, which were asked about in two forms only. The approximate N for all forms was 15,500.
SOURCE: The Monitoring the Future Study, the University of Michigan.

*Data based on the percentage of regular smokers (ever).

TABLE 6-1c

Incidence of Use for Various Drugs, by Grade Twelfth Graders, 1997

(Entries are percentages)

Grade in which drug was first used	Marijuana	Inhalants[a]	Amyl/Butyl Nitrites	Hallucinogens[a]	LSD	PCP	Cocaine	Crack	Other Forms of Cocaine	Heroin	Other Opiates	Stimulants[b]	Barbiturates	Methaqualone	Tranquilizers	Alcohol	Been Drunk	Cigarettes	Cigarettes (Daily)[c]	Smokeless Tobacco	Steroids
6th (or below)	1.3	1.5	0.3	0.2	0.2	0.4	0.3	0.3	0.3	0.2	0.2	0.6	0.4	0.1	0.3	9.6	3.3	15.2	1.7	4.4	0.3
7-8th	8.9	4.3	0.5	1.1	1.1	0.4	0.7	0.4	0.5	0.4	1.1	2.2	0.9	0.3	0.8	20.2	13.7	21.5	5.5	6.2	0.2
9th	12.8	3.4	0.5	3.2	3.1	0.7	1.2	0.6	1.2	0.3	2.0	3.0	1.8	0.3	1.4	19.1	17.0	11.0	6.3	5.8	0.7
10th	12.5	3.4	0.3	4.9	4.4	1.1	2.0	0.8	2.4	0.3	2.2	4.1	1.7	0.3	1.8	16.5	14.1	8.3	6.4	4.5	0.2
11th	8.8	2.2	0.4	3.4	3.0	0.8	2.4	1.0	1.9	0.5	2.7	4.2	2.4	0.5	2.5	10.8	11.0	6.1	5.0	3.3	0.3
12th	5.4	1.2	0.1	2.3	1.8	0.4	2.0	0.8	2.0	0.4	1.6	2.4	0.9	0.2	1.1	5.6	5.0	3.4	2.5	1.2	0.7
Never used	50.4	83.9	98.0	84.9	86.4	96.1	91.3	96.1	91.8	97.9	90.3	83.5	91.9	98.3	92.2	18.3	35.8	34.6	72.6	74.7	97.6

NOTES: Percentages are based on two of the six forms (N = approximately 5,100) except for cocaine, crack, and cigarettes, for which percentages are based on three of the six forms (N = approximately 7,700), and inhalants, nitrites, PCP, other forms of cocaine, and steroids, for which percentages are based on one of the six forms (N = approximately 2,600).

SOURCE: The Monitoring the Future Study, the University of Michigan.

[a] Unadjusted for known underreporting of certain drugs. See text for details.

[b] Based on the data from the revised question, which attempts to exclude the inappropriate reporting of nonprescription stimulants.

[c] Data based on the percentage of regular smokers (ever).

TABLE 6-1d

Incidence of Use for Various Drugs: A Comparison of Responses from Eighth, Tenth, and Twelfth Graders, 1997

(Entries are percentages)

Grade level of respondents:	Marijuana	Inhalants[a]	Hallucinogens[a]	LSD	Cocaine	Heroin	Stimulants[b]	Tranquilizers	Alcohol	Been Drunk	Cigarettes	Cigarettes (Daily)[c]
	Percent who used by end of 6th grade											
8th	6.5	11.6	1.5	1.0	1.1	0.4	2.8	1.4	27.9	7.1	28.2	4.0
10th	3.8	5.1	0.2	0.2	0.2	0.2	0.9	0.6	15.4	4.6	20.8	2.3
12th	1.3	1.5	0.2	0.2	0.3	0.2	0.6	0.3	9.6	3.3	15.2	1.7
	Percent who used by end of 8th grade											
8th	22.6	21.0	5.5	4.7	4.4	2.0	12.4	4.8	53.9	25.2	47.3	12.0
10th	20.7	12.9	3.4	3.0	2.1	0.9	6.5	2.9	46.3	23.1	46.6	11.3
12th	10.2	5.8	1.3	1.3	1.0	0.6	2.8	1.1	29.8	17.0	36.7	7.2
	Percent who used by end of 10th grade											
10th	42.3	18.4	10.4	9.5	7.0	2.2	16.9	7.3	72.0	49.4	60.2	22.3
12th	35.5	12.6	9.4	8.8	4.2	1.2	9.9	4.3	65.4	48.1	56.0	19.9

NOTES: For 8th and 10th graders, all drugs were asked about in all four forms except for the following: hallucinogens, LSD, heroin, stimulants, tranquilizers, and smokeless tobacco, which were asked about in two forms only. The approximate N for all forms for 8th graders was 18,600 and for 10th graders was 15,500. For 12th graders, percentages are based on two of the six forms (N = approximately 5,100) except for cocaine, crack, and cigarettes, for which percentages are based on three of the six forms (N = approximately 7,700), and inhalants, nitrites, PCP, other forms of cocaine, and steroids, for which percentages are based on one of the six forms (N = approximately 2,600).

SOURCE: The Monitoring the Future Study, the University of Michigan.

[a] Unadjusted for underreporting of certain drugs. See text for details.

[b] Based on the data from the revised question, which attempts to exclude the inappropriate reporting of non-prescription stimulants.

[c] Data based on the percentage of regular smokers (ever).

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a glass with parents or for religious purposes. Younger students (eighth graders) are less likely to have had a full drink or more and may be more likely to report first use of a limited amount. Thus, the eighth-grade data probably exaggerate the phenomenon of having more than a few sips, whereas the twelfth-grade data may understate it. Note that the data from the three groups of respondents tend to converge as we ask about lifetime alcohol use by the time they reach higher grade levels.

- A fair number of students from all three grade levels indicated having ***gotten drunk*** by the end of sixth grade (between 3% and 7%, see Table 6-1d), and much of the difference may be attributable to the differential inclusion of eventual dropouts.

- For ***marijuana***, the highest initiation rates are seen in grades 9 through 11, although 23% of the 1997 eighth graders reported that they already had tried marijuana.

- The illicit drugs other than marijuana and inhalants generally do not reach peak initiation rates until the high school years (grades 10 through 12), consistent with the progression model noted earlier. ***Stimulants***, specifically, show a high initiation rate in grades 9 through 12.

- Of those who said they had tried a drug by twelfth grade, the proportion saying that they initiated use *prior to grade 10* is as follows: ***nitrites*** (65%), ***inhalants*** (57%), ***steroids*** (50%), ***marijuana*** (46%), ***heroin*** (43%), ***methaqualone*** (41%), ***PCP*** and ***barbiturates*** (38%), ***amphetamines*** (35%), ***opiates other than heroin*** (34%), ***crack*** (33%), ***tranquilizers*** and ***LSD*** (32%), ***hallucinogens*** (30%), ***cocaine*** (25%), and ***other forms of cocaine*** (24%). Note that such an ordering can be influenced considerably by secular trends in use.

TRENDS IN USE AT EARLIER GRADE LEVELS

Using the retrospective data provided by members of each senior class concerning their grade of first use, it has been possible to reconstruct lifetime prevalence trend curves for lower grade levels over many earlier years. Obviously, data from school dropouts are not included in any of the curves based on twelfth graders. Figures 6-1a through 6-1y show the reconstructed lifetime prevalence curves for earlier grade levels for a number of drugs. When data are available, starting with Figure 6-1d, there is also a panel showing retrospective prevalence curves based on data gathered from eighth graders, who have been included in the study since 1991.[35] These curves *would* include data from most of the eventual dropouts.

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[35] Note that the scale used in the graphs based on data from eighth graders is an expanded version of the scale used for twelfth graders (because the prevalence rates are generally lower). This tends to exaggerate changes in the eighth-grade graphs relative to those in the twelfth-grade graphs.

- Figure 6-1a provides the trends at each grade level for lifetime use of ***any illicit drug*** (based on data from the twelfth-grade survey). It shows that for all grade levels there was a continuous increase in illicit drug involvement through the 1970s. Fortunately, the increase in use below seventh grade was quite small; the retrospective rate in 1969 (based on the class of 1975) for sixth grade or below was 1.1%. That figure increased modestly through 1978, leveled for a long time, and then declined in the late 1980s, from 3.5% in 1986 to 2.1% in 1989. The lines for the other grade levels all show much steeper upward slopes, followed by earlier and longer declines. For example, about 37% of tenth graders in 1973 had used some illicit drug compared to 52% by 1980. This statistic fell to 28% by 1991 and then leveled. It began to rise again in 1994.

- Most of the early increase in ***any illicit drug use*** was due to increasing proportions using marijuana. We know this from the results in Figure 6-1b, showing trends for each grade level in the proportion having used ***any illicit drug other than marijuana*** in their lifetime. Compared to Figure 6-1d for marijuana use, these trend lines are relatively flat throughout the 1970s and, if anything, begin to taper off among ninth and tenth graders between 1975 and 1977. The biggest cause of the increases in these curves from 1978 to 1981 was the rise in reports of ***amphetamine*** use. As noted earlier, we suspect that at least some of this rise was artifactual. If amphetamine use is removed from the calculations, even greater stability is shown in the proportion using illicit drugs other than marijuana or amphetamines (see Figure 6-1c).

- As can be seen in the top panel of Figure 6-1d, for the years covered across the decade of the 1970s, ***marijuana*** use rose steadily at all grade levels down through the seventh and eighth grades. Beginning in 1980, lifetime prevalence of marijuana use began to decline in grades 9 through 12. Declines in grades 7 and 8 began a year later, in 1981.

  There was also some small increase in marijuana use during the 1970s at the elementary school level, below seventh grade. Use by sixth grade or lower rose gradually from 0.6% for the class of 1975 (who were sixth graders in 1968-69) to a peak of 4.3% in the class of 1984 (who were sixth graders in 1977-78). Use began dropping thereafter and for the twelfth-grade class of 1997 (who were sixth graders in 1991) was down to 1.3%. (The most up-to-date data from the 1997 eighth graders, which are not exactly comparable because of the inclusion of eventual dropouts, yield a prevalence estimate of 6.5% for these students when they were sixth graders in 1995.)

  Both the top and bottom panels of Figure 6-1d show the sharp increase in marijuana lifetime prevalence that began after 1991 in grades 6 through 11 and in 1992 in grade 12. The recent upturn in the any illicit drug use index (Figure 6-1a) is due to the sharp increase in marijuana use (Figure

6-1d), although the proportions using any illicit drug other than marijuana (Figure 6-1b) rose modestly.

- Questions about grade of first use for ***inhalants*** (unadjusted for nitrites) were introduced in 1978. The retrospective trend curves (top panel of Figure 6-1e) suggest that during the mid-1970s experience with inhalants decreased slightly for most grade levels and then began to rise. For the upper grade levels there was a continued rise, peaking with the classes of 1989 and 1990. The twelfth-grade class of 1992 showed lower rates of initiation than its two predecessor classes at all grade levels, but the classes of 1993 and 1994 showed upward trends, followed by a dip in the classes of 1995 through 1997.

  Among the eighth-grade respondents (lower panel of Figure 6-1e), an upward trend occurred in 1992 for grades 7 and 8, before leveling around 1995.

- Because grade-of-first-use data have been gathered for the ***nitrite inhalants*** since 1979, retrospective data are shown starting in that year (Figure 6-1f). These do not show the long-term increase observed for the overall inhalant category. To the contrary, they show a substantial decline. Because their use level has gotten so low, their omission by some respondents from their reports of overall inhalant use has had much less effect on the adjusted inhalants statistics (not graphed here) in recent years than it did when nitrite use was more common.

- Lifetime prevalence of ***hallucinogen*** use (unadjusted for under-reporting of PCP) began declining among students at most grade levels in the mid-1970s (Figure 6-1g), and this gradual decline continued through the mid-1980s. Recent years have shown some fluctuations, with an increase in initiation since about 1992 in grades 9 and above.

- Trend curves for the specific hallucinogen ***LSD*** (Figure 6-1h) are similar in shape (though at lower rates, of course). Incidence rates for ***hallucinogens other than LSD*** (Figure 6-1i) declined from the mid-1970s through the late-1980s—particularly in the upper grades—before leveling. After 1991, use began to rise again.

- There is less trend data for ***PCP***, since questions about grade of first use for this drug were not added until 1980. However, some interesting results have emerged. A sharp downturn began around 1979 (see Figure 6-1j), and use declined substantially in all grade levels in which there had been appreciable use until 1987. Until 1993 or 1994 there was little change and the overall lifetime prevalence rates remained very low. More recently, there has been some increase in use.

- ***Cocaine*** use at earlier grade levels is given in Figure 6-1k. For the twelfth-grade classes, one clear contrast to the marijuana pattern is that more than half of cocaine initiation takes place in grades 10 through 12 (rather than earlier, as has been the case for marijuana in most years). Further, most of the increase in cocaine experience between 1976 and 1980 occurred in grades 11 and 12, not below. After 1980, experience with cocaine generally remained fairly level until after 1986, when use among eleventh and twelfth graders began to show a significant decline. (There seemed to be less of a decline in the lower grades.) Lifetime prevalence rates leveled after 1991 in the upper grades, but rates began to rise in grades 6, 7, and 8 after 1990. (Even in the upper grades, lifetime prevalence began to rise after 1994 or 1995.) The increase that occurred in the 1990s suggests a cohort effect for cocaine use.

- Questions on grade of first use for ***crack*** were first asked of the class of 1987. The retrospective data show crack initiation falling at all grade levels after 1986, but the largest proportional declines occurred for grades 11 and 12 (see Figure 6-1l). Rates then leveled, and more recently rates have begun inching up. Rates for eighth graders have also been up slightly in the seventh and eighth grades in recent years (lower panel of Figure 6-1l). ***Powdered cocaine*** clearly fell more sharply than crack in the decline phase (see Figure 6-1m), again mostly in grades 11 and 12. The recent upturn in use of cocaine powder pretty much parallels the upturn in crack use.

- Though difficult to see in Figure 6-1n, the ***heroin*** lifetime prevalence figures for grades 9 through 12 began declining in the mid-1970s, then leveled by 1979, and showed no evidence of reversal until quite recently. Since about 1991, there has been an increase in lifetime prevalence at all grade levels above sixth grade. In 1997, however, there was a leveling or decline in the grades for which data are available.

- The lifetime prevalence of use of ***opiates other than heroin*** remained relatively flat at all grade levels from the mid-1970s through 1990, with the class of 1991 showing the first evidence of a decline when they reached the upper grades (Figure 6-1o). Rates then leveled briefly before showing some increase, starting in the twelfth-grade class of 1995.

- The lifetime prevalence statistics for ***stimulants*** peaked briefly for grades 9 through 12 during the mid-1970s (see Figure 6-1p). However, they showed a sharp rise in the late 1970s at virtually all grade levels. As has been stated earlier, we believe that some, perhaps most, of this upturn was artifactual in the sense that nonprescription stimulants accounted for much of it. However, regardless of what accounted for it, beginning in 1979 a clear upward secular trend was observed across all cohorts and grade levels. The unadjusted data from the class of 1983 gave the first indication of a reversal of this trend. The adjusted data from the classes of 1982 through 1992 suggest that the use of stimulants leveled around 1982 and thereafter fell appreciably in grades 9 through 12. The classes of 1993 and 1994 showed an upturn in use in the upper grade levels, and the recent surveys of eighth and tenth graders show that some upturn occurred among them after 1992. The lower panel of Figure 6-1p shows an increase in grade 7 as well, which began after 1991 and lasted through 1996.

- As the graphs for the two subclasses of sedatives—barbiturates and methaqualone—show, the trend lines have been quite different for them at earlier grade levels as well as in twelfth grade (see Figures 6-1q and 6-1r). Lifetime prevalence of ***barbiturate*** use fell sharply for the upper grade levels for all classes from 1974 or 1975 until the late 1970s; the lower grade levels showed some increase in the late 1970s (perhaps reflecting the advent of some look-alike drugs), and in the mid-1980s all grade levels resumed the decline. In the late 1980s there was a leveling of the rates, followed by signs of an upturn by the mid-1990s in the upper grade levels.

  During the mid-1970s, ***methaqualone*** use started to fall off at about the same time as barbiturate use in nearly all grade levels, but it dropped rather little and then flattened (see Figure 6-1r). Between 1978 and 1981, there was a moderate resurgence in use in all grade levels; but after 1982 there was a sharp decline at all grade levels to near zero by the early 1990s.

- Lifetime prevalence of ***tranquilizer*** use (Figure 6-1s) also began to decline at all grade levels in the mid-1970s. It is noteworthy that, as for sedatives, the overall decline in tranquilizer use has been considerably greater in the upper grade levels than the lower ones. Overall, it would appear that the tranquilizer trend lines have been following a similar course to those of barbiturates. So far, the curves are different only in that tranquilizer use continued a steady decline among eleventh and twelfth graders after 1977 (at least through the class of 1990), while the barbiturate use decline was interrupted for awhile in the early 1980s. Since 1992, there has been a slight increase in lifetime prevalence in grades 8 and above.

- The curves for lifetime prevalence of ***alcohol use*** at grades 11 and 12 (Figure 6-1t) are very flat between the early 1970s and late 1980s, reflecting little change over more than a decade. More recent classes (1989-1993) showed slight declines, which ended with the class of 1993. By way of contrast, in the seventh through tenth grades, the lifetime prevalence curves show slight upward slopes in the early 1970s, indicating that, compared to the earlier cohorts (prior to the class of 1978), more recent classes initiated use at earlier ages. There was an even sharper upward trend in the mid-1980s, particularly in the seventh and eighth grades. Thus, while 27% of the class of 1975 first had used alcohol in eighth grade or earlier, 36% in the class of 1993 had done so. Females accounted for most of the change; 42% of females in the class of 1975 first had used alcohol prior to tenth grade, compared to 53% in the class of 1993. Because all of the results from the class of 1994 onward are based on the revised questions about alcohol use, these data are not strictly comparable to the earlier trend data. The revised data from the classes of 1993 through 1997 show rather little change. The lower panel of Figure 6-1t shows a small decline in lifetime prevalence from the late 1980s into the early 1990s in grades 6 through 8. The figure also shows a subsequent leveling in more recent years.

Beginning with the class of 1986, we added questions asking twelfth graders when did they first "drink enough to feel drunk or very high." Figure 6-1u, which gives these results for having ***been drunk***, shows fairly similar curves to those for lifetime prevalence of alcohol use. The classes of 1990 through 1993 show modest declines in this behavior at all grade levels above sixth grade.

- Questions asking seniors "when did you smoke your first cigarette" were added in 1986. Figure 6-1v shows that for the class of 1986 the rate of ***cigarette smoking*** initiation was quite high by grade 6 (i.e., in 1980); over 20% had used cigarettes by sixth grade. In subsequent classes, this measure fell only slightly; 15% of the class of 1997 reported initiating cigarette smoking by sixth grade, that is, by 1991.

  Substantial additional initiation occurred in grades 7 and 8. Over 43% of the class of 1986 had smoked a cigarette by the end of grade 8. This figure stands at 37% for the class of 1997. Initiation rates declined very gradually in the classes of 1986 through 1992 when they were at each grade level, from grade 6 onward. The classes of 1994 through 1997 showed some increase in initiation rates when they were in grades 10 through 12, but only the class of 1997 reflected that increase in the lower grades. This changed pattern is suggestive of a change in the underlying phenomenon, from the traditional cohort effect for cigarettes to a secular trend. Eighth graders have also shown a gradual increase in initiation since they were first surveyed in 1991; but, again, this increase was not observable when they were in the lower grades in earlier years.

- Figure 6-1w presents the smoking measure contained in the study since its inception: lifetime prevalence of cigarette smoking on a daily basis. It shows that initiation to ***daily smoking*** began to peak at the lower grade levels in the early to mid-1970s. This peaking did not become apparent among high school seniors until some years later. In essence, these changes reflect, in large part, cohort effects—a pattern of change that shows up consistently for class cohorts as they progress up in grade level. When differences in smoking at early ages are observed between cohorts, those differences endure in later life, most likely due to the highly addictive nature of nicotine.

  The classes of 1982 and 1983 showed some leveling of the previous decline, but the classes of 1984 through 1986 showed an encouraging resumption of the decline while they were in earlier grade levels. The data from the classes of 1987 and 1988 showed a pause in the decline. As we have said, from the class of 1975 through the class of 1992 the predominant pattern of change observed was that of a cohort effect.[36] Each "bulge" in the prevalence rate could be seen echoed at higher grade levels as those class cohorts passed through the upper grades. After 1992, however, a somewhat different pattern emerged—one more akin to a secular trend—where all age groups moved in parallel during the same historical period. Figure 6-1w shows that all grade levels above sixth grade displayed a sharp increase in initiation rates from 1991 or 1992 through 1995 or 1996. The lower grades may be exhibiting the resumption of a cohort effect pattern with the eighth-grade class of 1997, but further confirmation is needed. The presence of a secular trend effect does not necessarily negate the presence of a cohort effect.

- ***Smokeless tobacco*** use (Figure 6-1x) was first asked of seniors in the class of 1986. The questions about prevalence of smokeless tobacco use were dropped from the 1990 and 1991 surveys of twelfth graders but reinstated in 1992. The 1986-1989 survey questions were located near the end of one form; the questions in 1992 were located in a different form and placed early in the form. As a result of the changed placement of the questions, the estimates based on the earlier version and the later version are not strictly comparable; therefore, it may be misleading to connect the two trend lines. One thing that is clear from both sets of trend lines, however, is that smokeless tobacco use also shows strong evidence of enduring cohort differences—or "cohort effects."

  There appears to have been a rise in smokeless tobacco use in classes prior to the class of 1986, one that began to reverse in the twelfth-grade classes following 1986 (Figure 6-1x). Decline seemed to continue in the classes of 1992 through 1997; and quite possibly it was also present in the two missing classes (1990 and 1991), although we cannot say for sure. The lower panel in Figure 6-1x generally shows a pattern of continuing decline at the lower grade levels in more recent years.

- Information on grade of first use for ***steroids*** was not gathered prior to 1989, so rather limited information is available (Figure 6-1y). However, it does show some of the pattern characteristics of cohort change predominating over secular trends. There has not been a great deal of variation in the initiation of steroid use, although there did seem to be some decline in initiation between the classes of 1989 and 1991, followed by a leveling off. Both the eighth- and tenth-grade classes in 1994 and 1995 seemed to show a small increase in initiation, followed by an equivalent drop in each of the 1996 classes.

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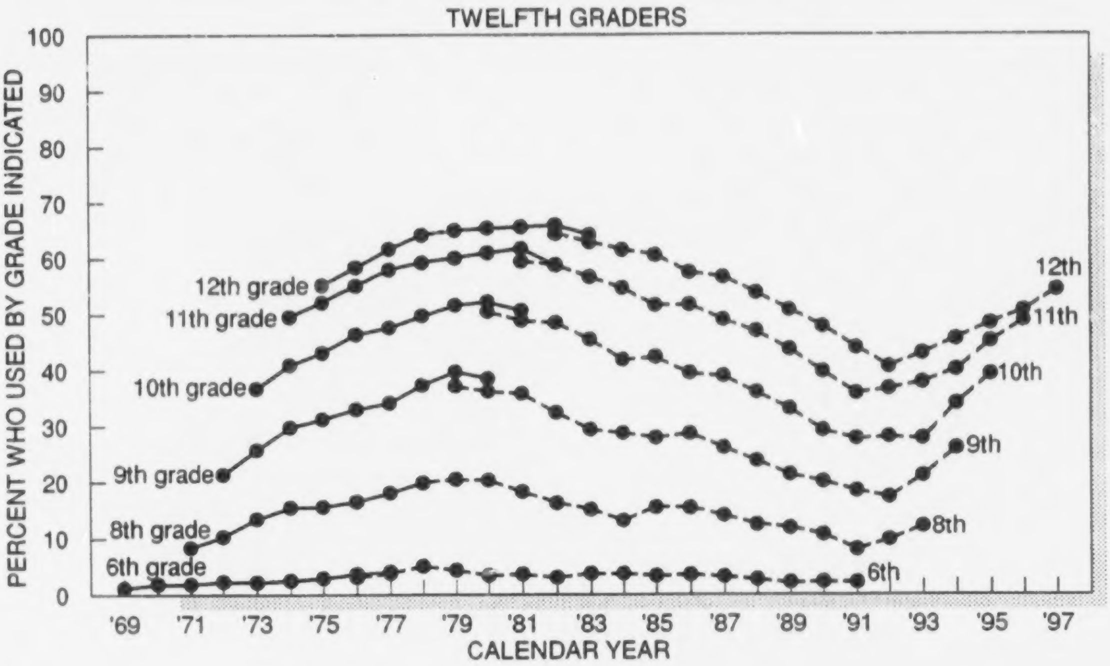
[36] This interpretation has been documented through multivariate analyses designed to separate and quantify secular trends, age effects, and cohort effects. See O'Malley, P.M., Bachman, J.G., & Johnston, L.D. (1988). Period, age, and cohort effects on substance use among young Americans: A decade of change, 1976-1986. *American Journal of Public Health*, *78*, 1315-1321.

FIGURE 6-1a

Use of Any Illicit Drug: Trends in Lifetime Prevalence for Earlier Grade Levels

Based on Retrospective Reports from Twelfth Graders



NOTE: The dotted lines connect percentages which result if non-prescription stimulants are excluded.

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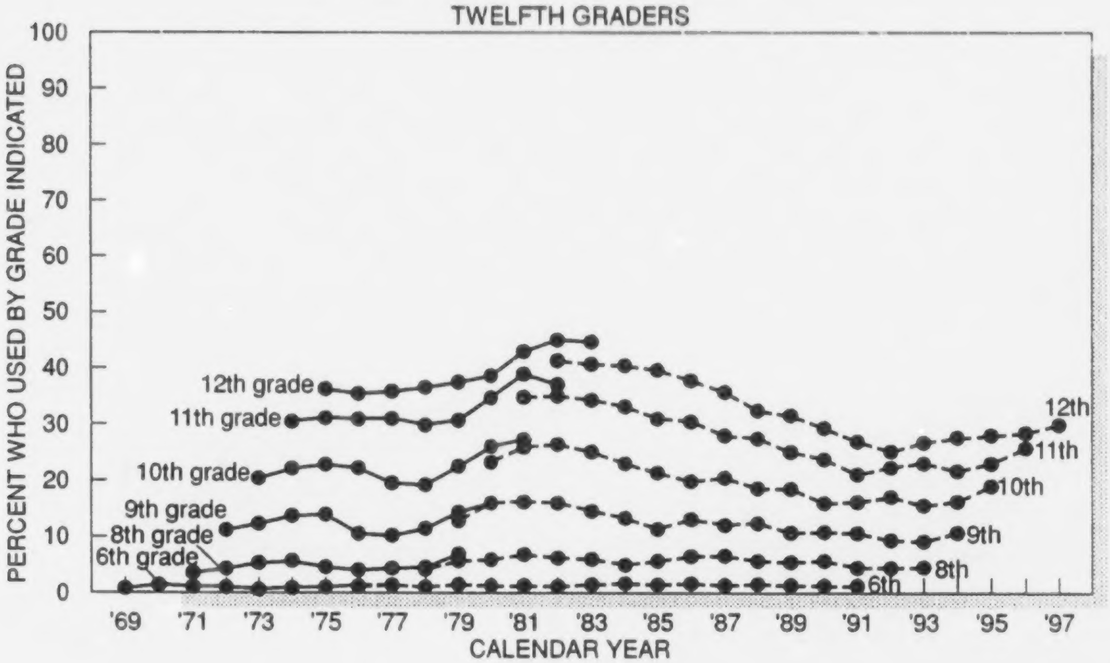
FIGURE 6-1b

Use of Any Illicit Drug Other than Marijuana: Trends in Lifetime Prevalence for Earlier Grade Levels

Based on Retrospective Reports from Twelfth Graders



NOTE: The dotted lines connect percentages which result if non-prescription stimulants are excluded.

FIGURE 6-1c

Use of Any Illicit Drug Other than Marijuana or Amphetamines: Trends in Lifetime Prevalence for Earlier Grade Levels

Based on Retrospective Reports from Twelfth Graders

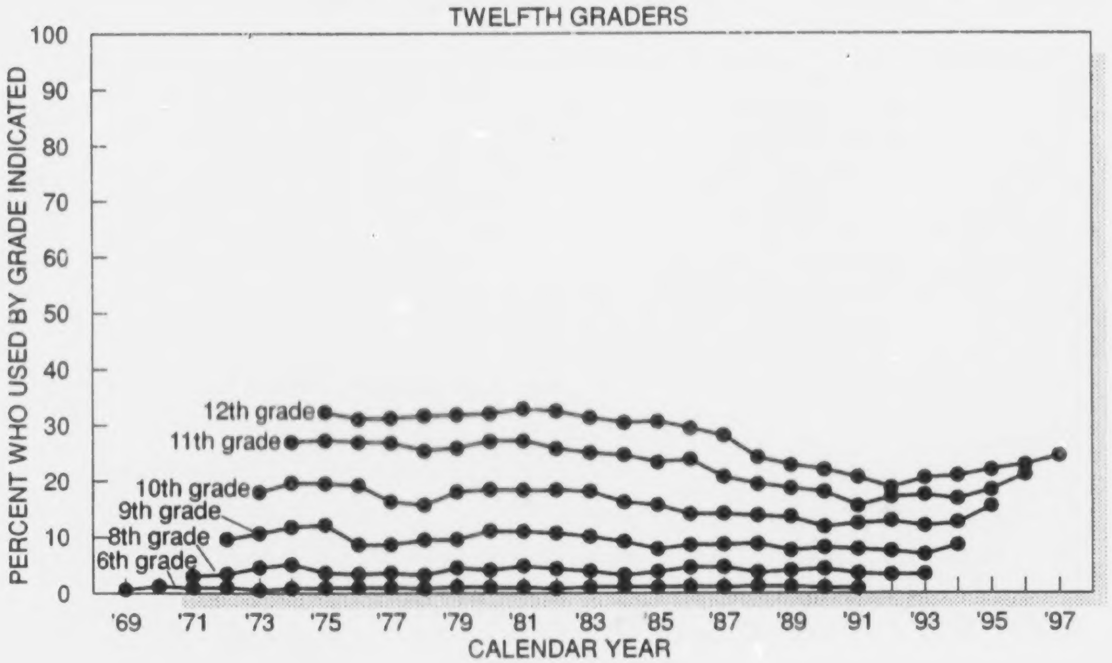


FIGURE 6-1d

Marijuana: Trends in Lifetime Prevalence for Earlier Grade Levels
Based on Retrospective Reports from Twelfth and Eighth Graders

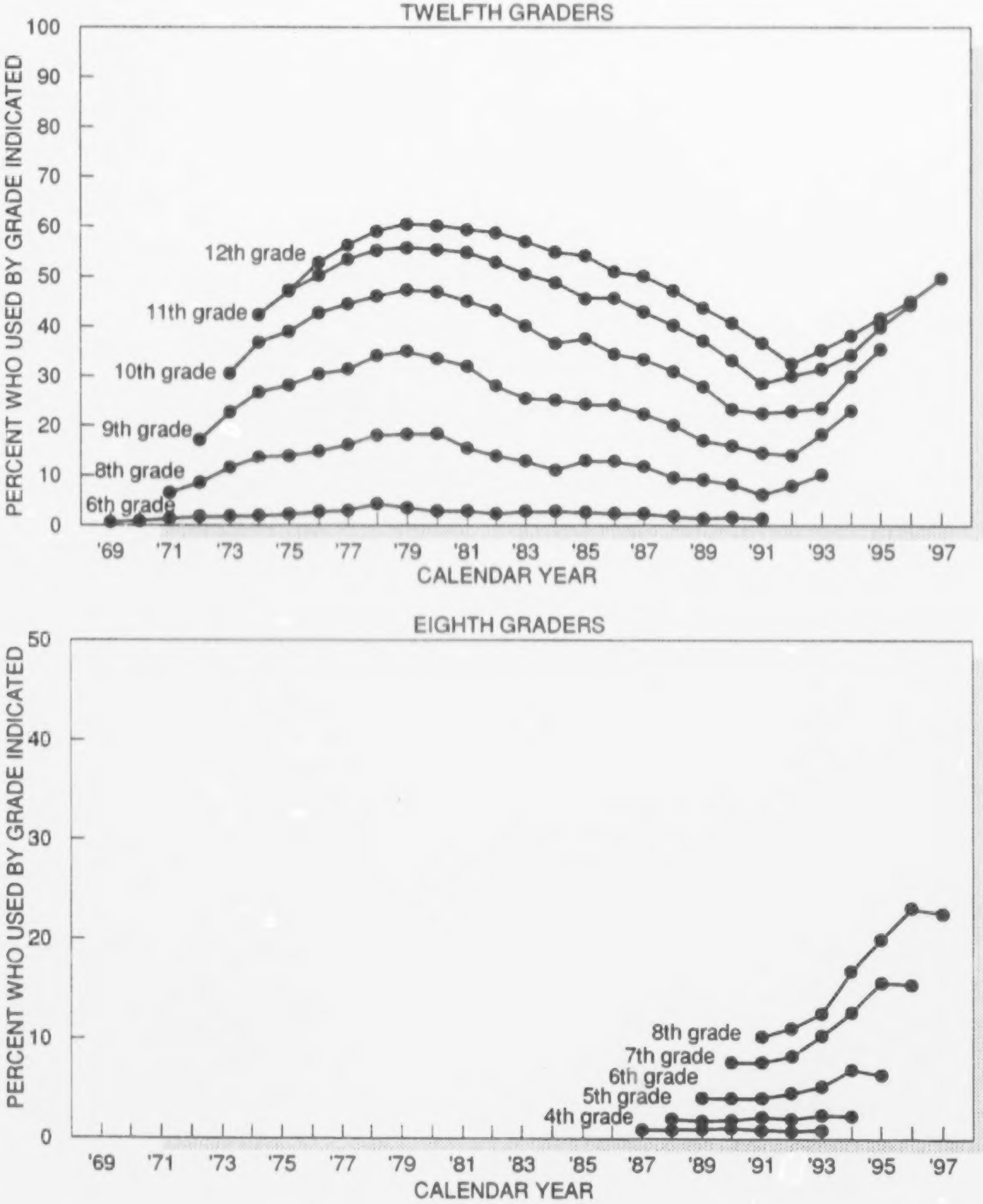


FIGURE 6-1e

Inhalants: Trends in Lifetime Prevalence for Earlier Grade Levels

Based on Retrospective Reports from Twelfth and Eighth Graders

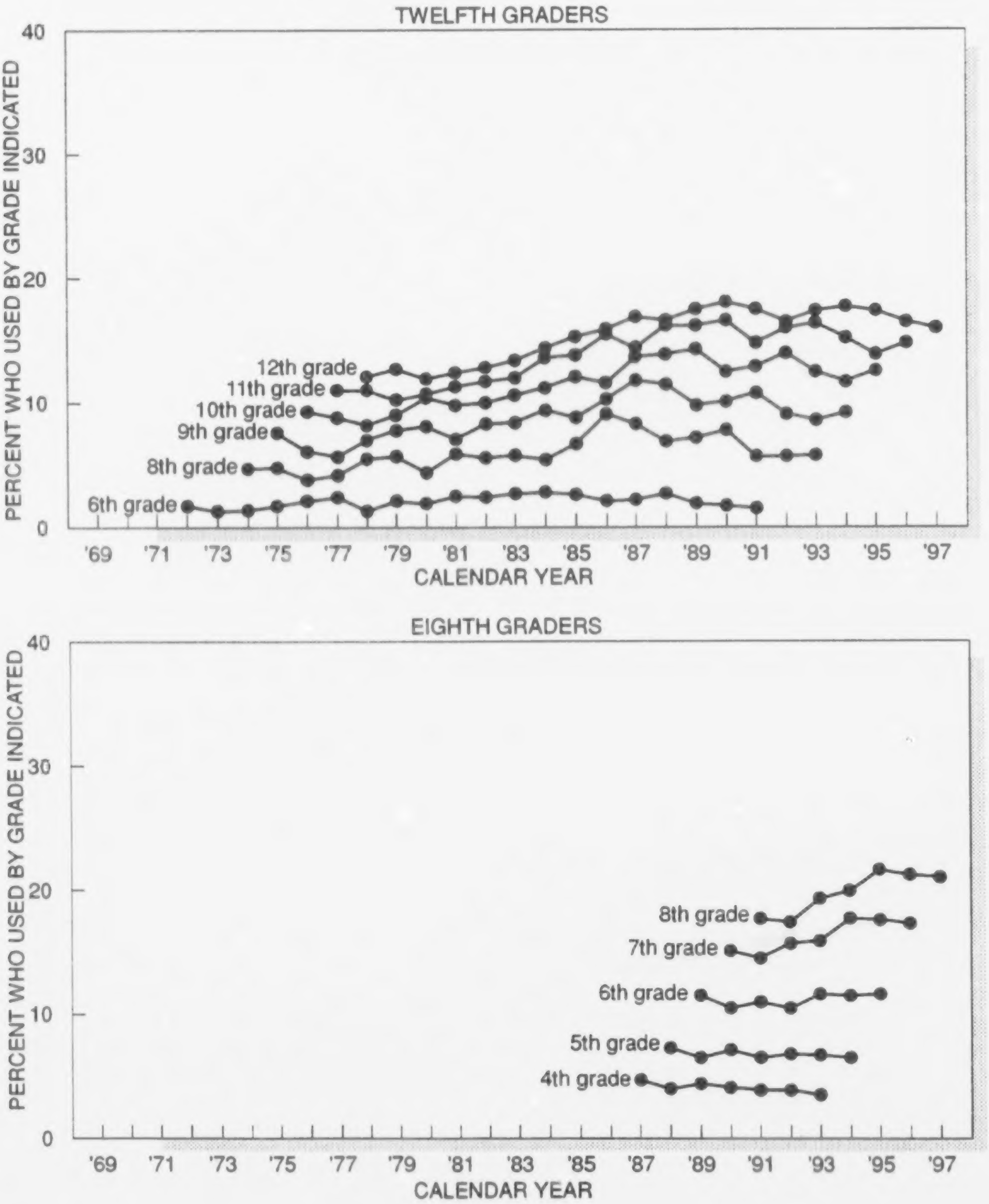


FIGURE 6-1f

Nitrites: Trends in Lifetime Prevalence for Earlier Grade Levels

Based on Retrospective Reports from Twelfth Graders

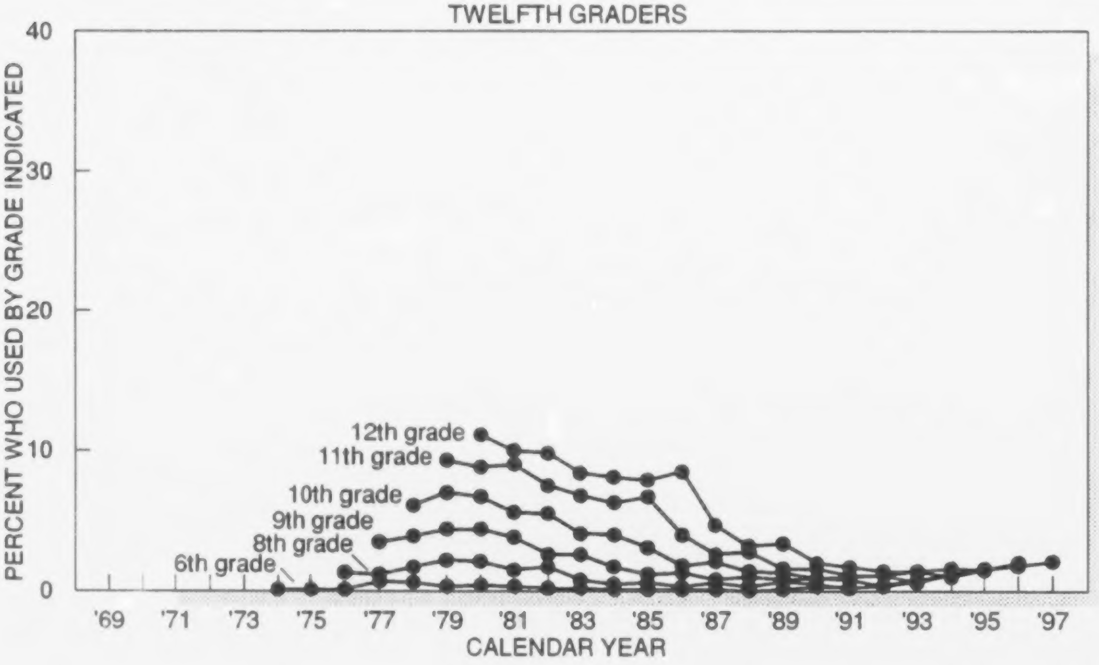


FIGURE 6-1g

Hallucinogens: Trends in Lifetime Prevalence for Earlier Grade Levels

Based on Retrospective Reports from Twelfth and Eighth Graders

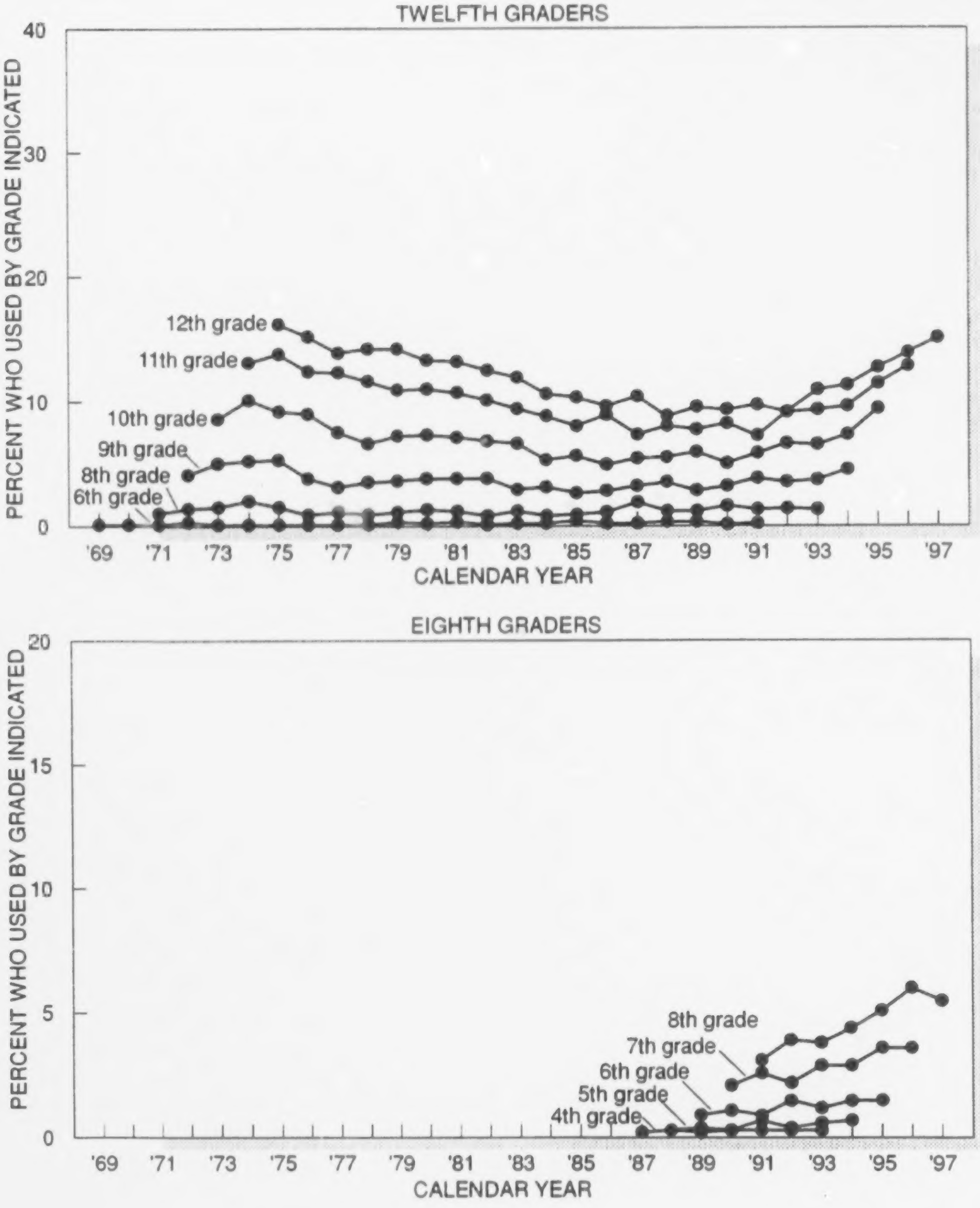


FIGURE 6-1h

LSD: Trends in Lifetime Prevalence for Earlier Grade Levels

Based on Retrospective Reports from Twelfth and Eighth Graders

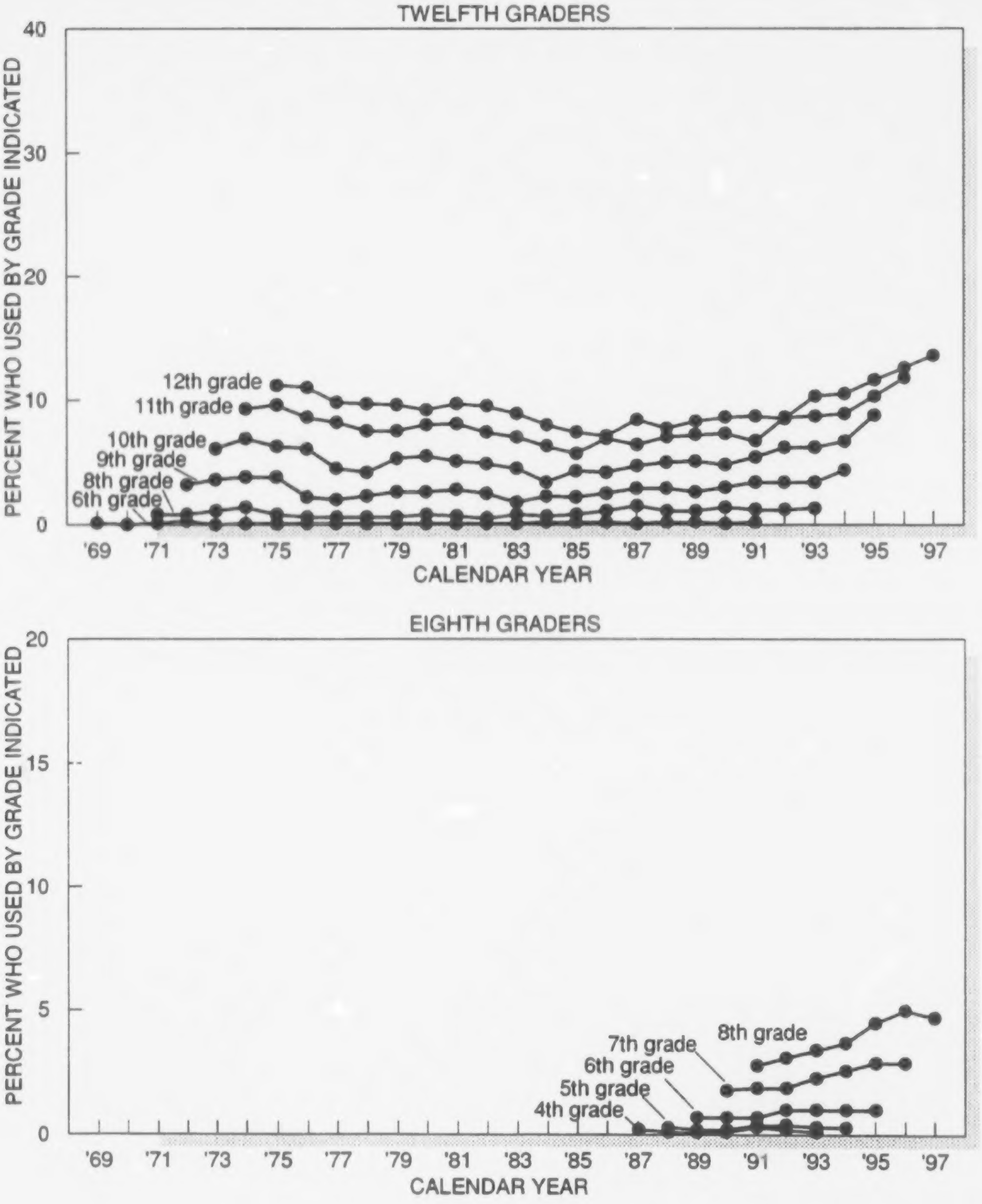


FIGURE 6-1i

Hallucinogens Other Than LSD: Trends in Lifetime Prevalence for Earlier Grade Levels

Based on Retrospective Reports from Twelfth Graders

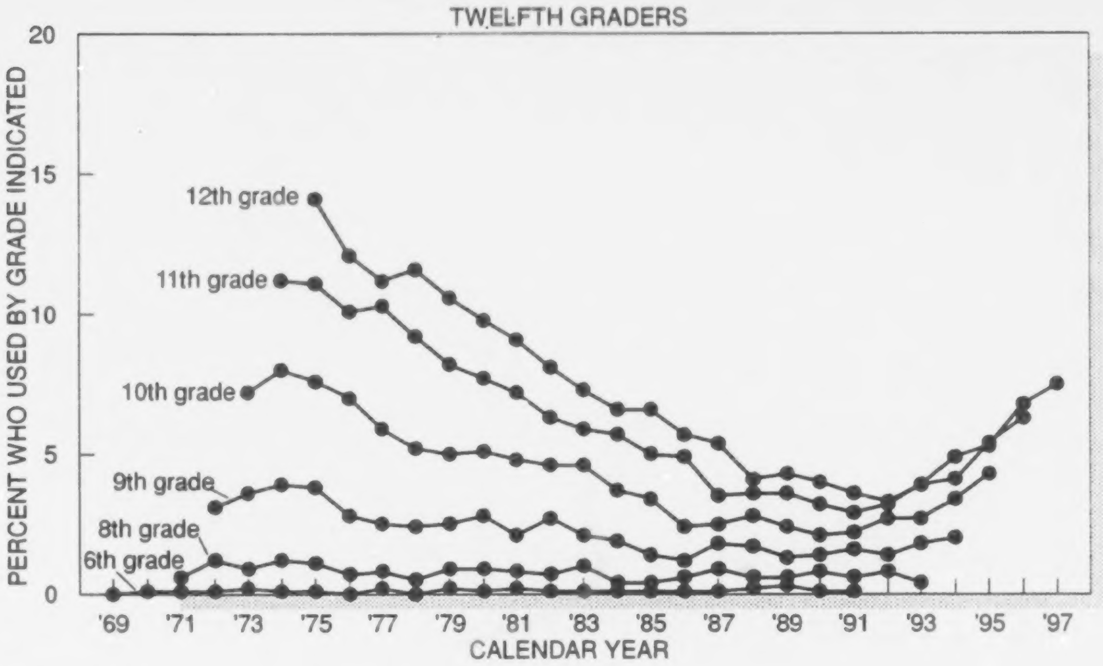


FIGURE 6-1j

PCP: Trends in Lifetime Prevalence for Earlier Grade Levels

Based on Retrospective Reports from Twelfth Graders

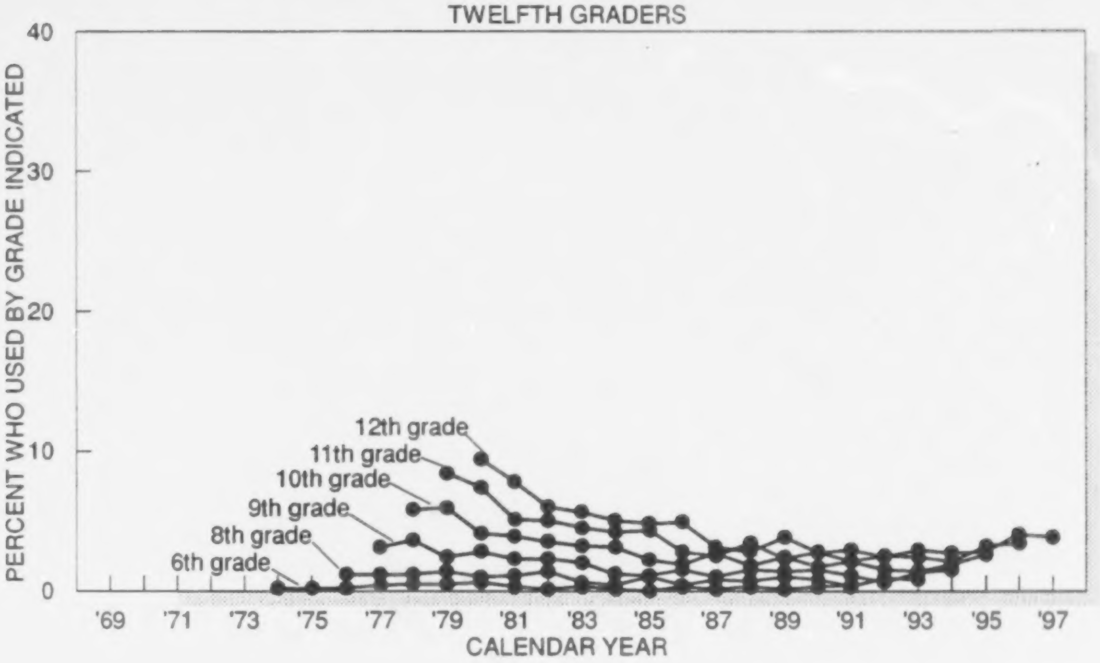


FIGURE 6-1k

Cocaine: Trends in Lifetime Prevalence for Earlier Grade Levels

Based on Retrospective Reports from Twelfth and Eighth Graders

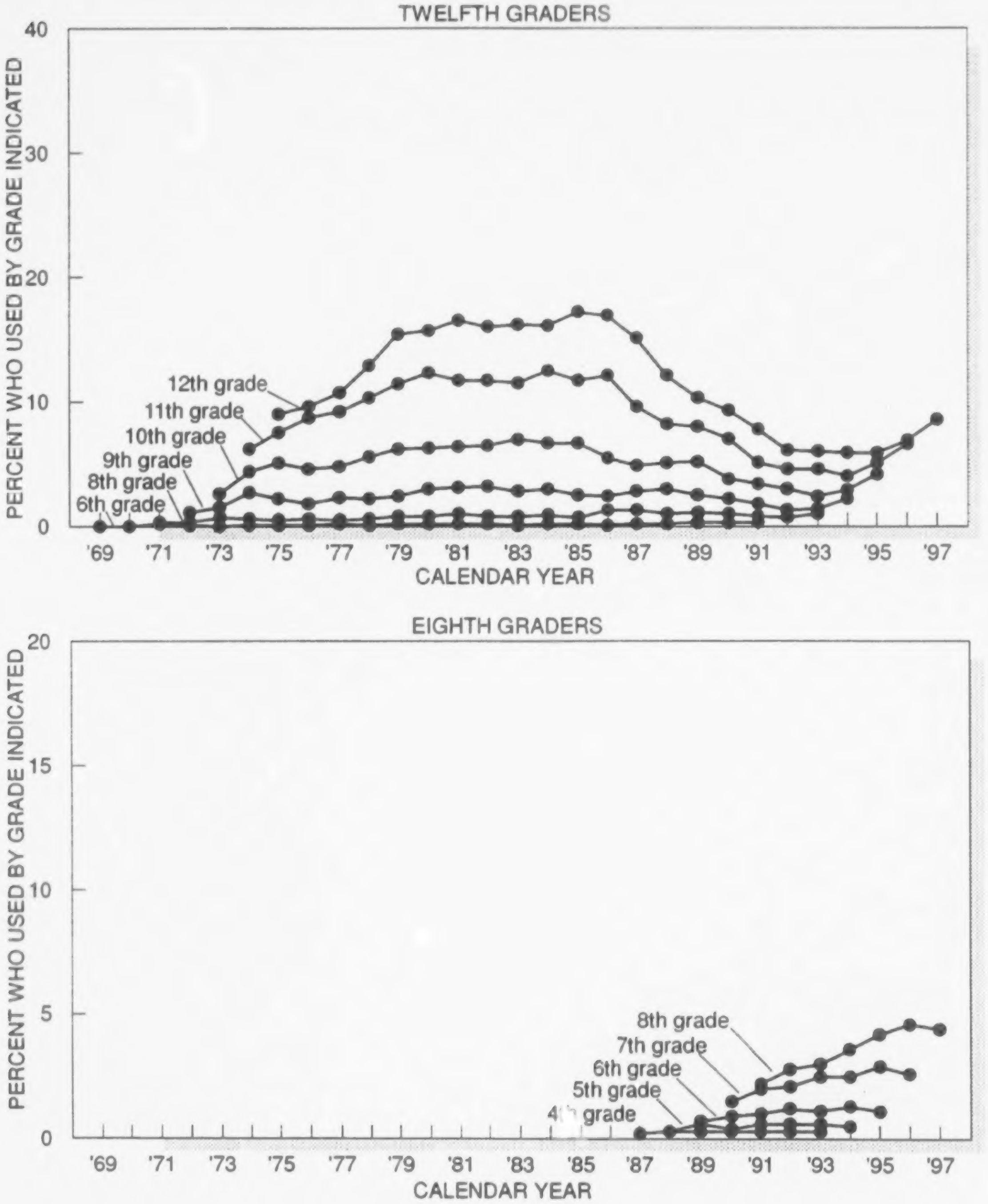
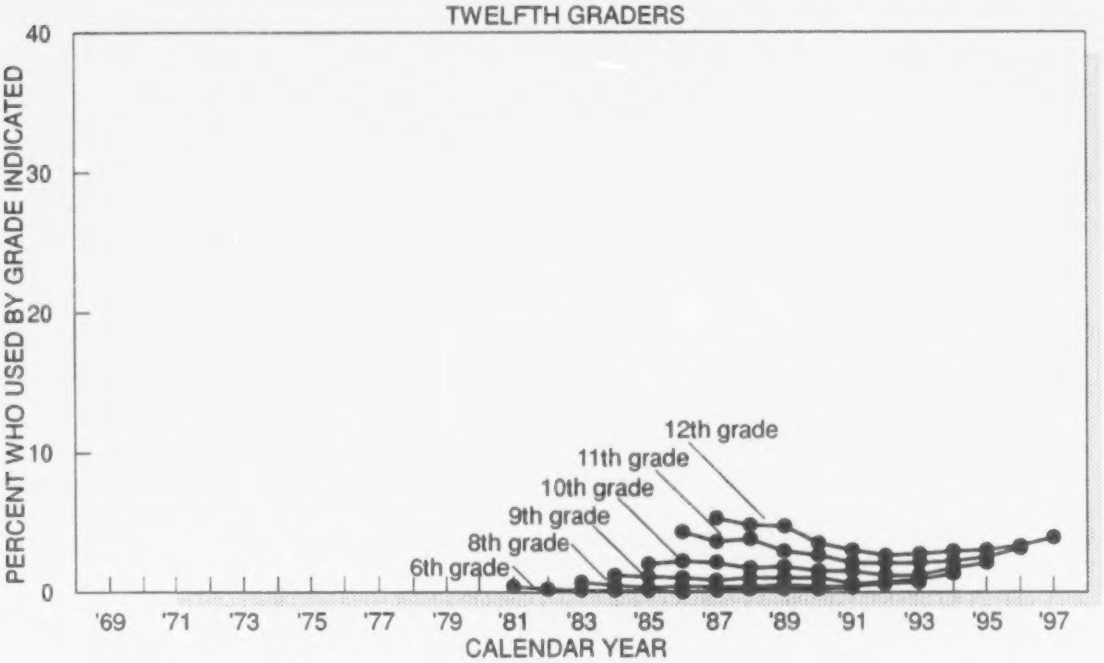


FIGURE 6-11

Crack Cocaine: Trends in Lifetime Prevalence for Earlier Grade Levels

Based on Retrospective Reports from Twelfth and Eighth Graders



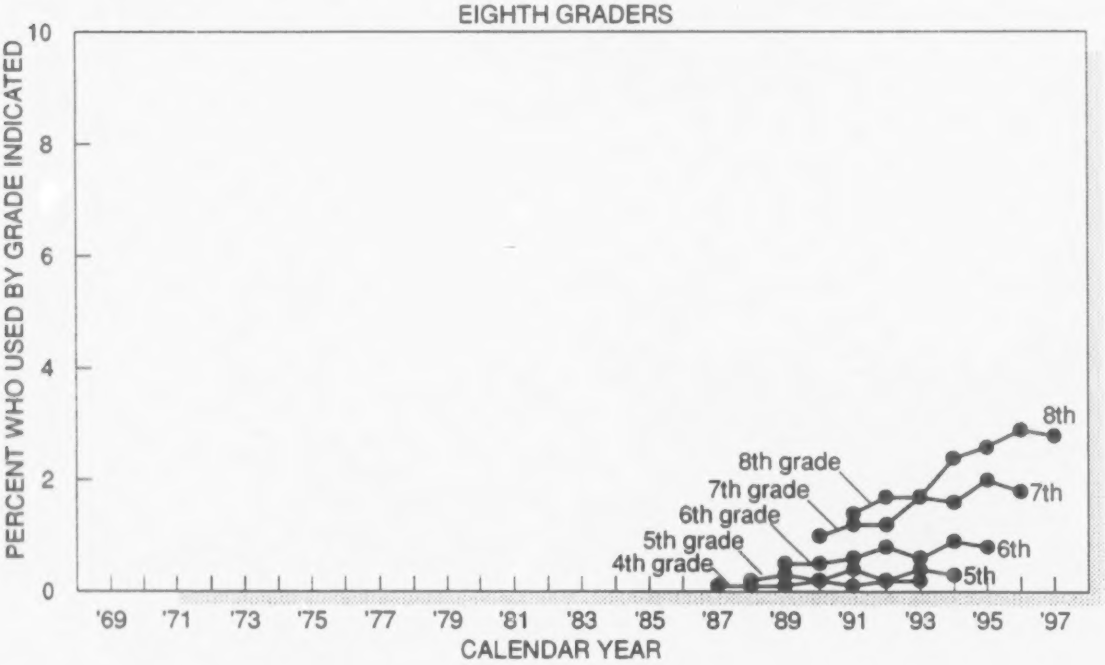


FIGURE 6-1m

Other Forms of Cocaine: Trends in Lifetime Prevalence for Earlier Grade Levels

Based on Retrospective Reports from Twelfth and Eighth Graders

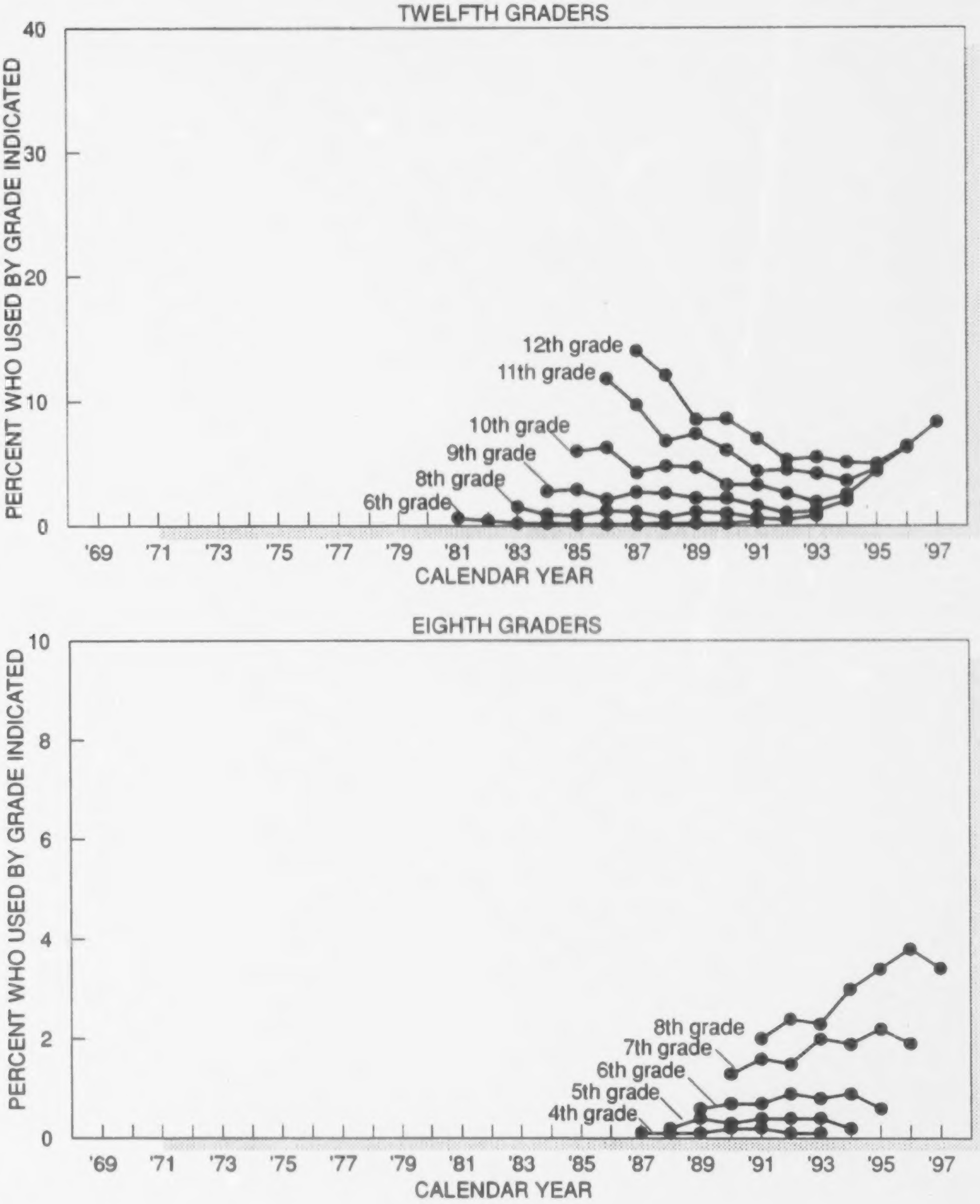


FIGURE 6-1n

Heroin: Trends in Lifetime Prevalence for Earlier Grade Levels

Based on Retrospective Reports from Twelfth and Eighth Graders

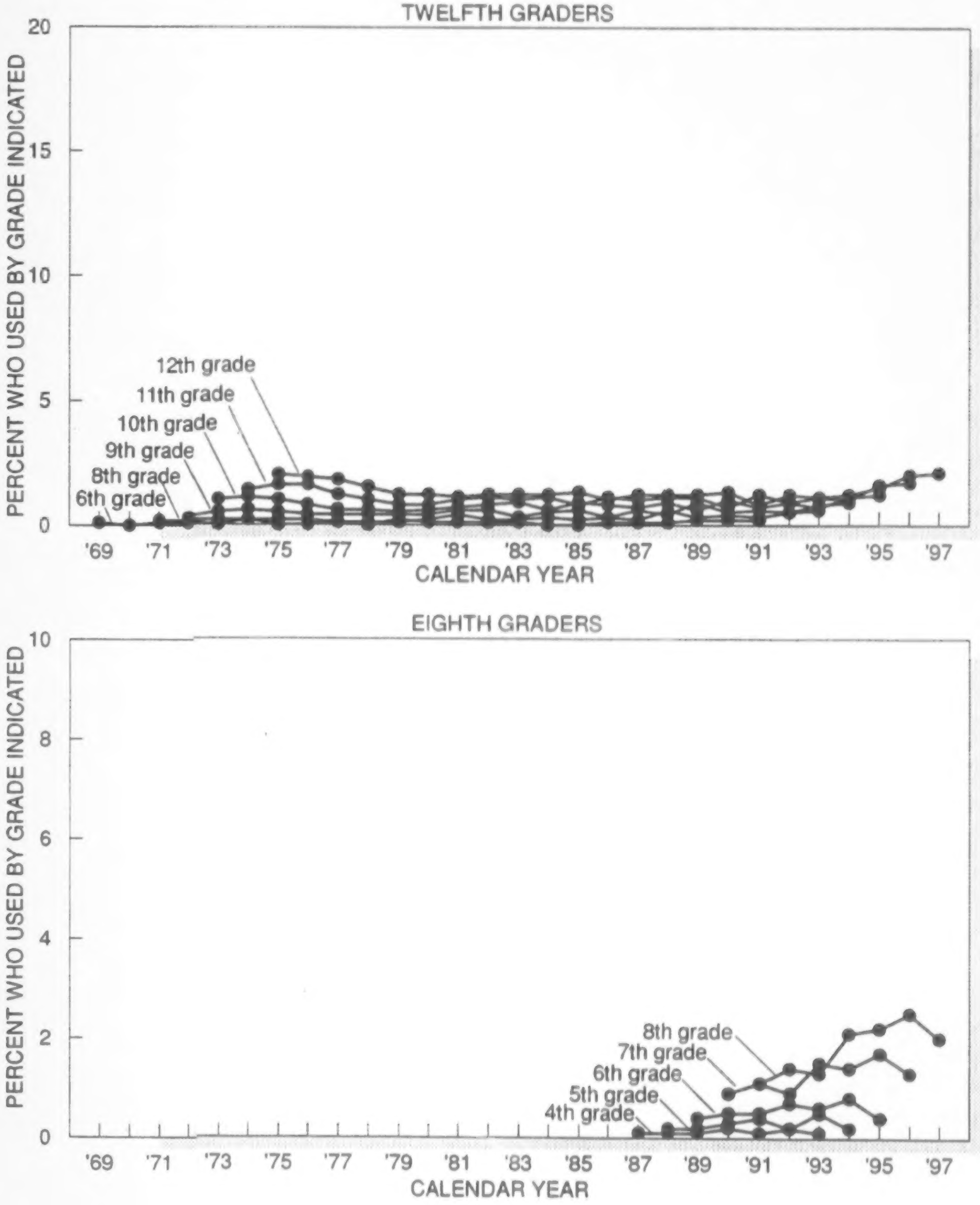


FIGURE 6-1o

Other Opiates: Trends in Lifetime Prevalence for Earlier Grade Levels

Based on Retrospective Reports from Twelfth Graders

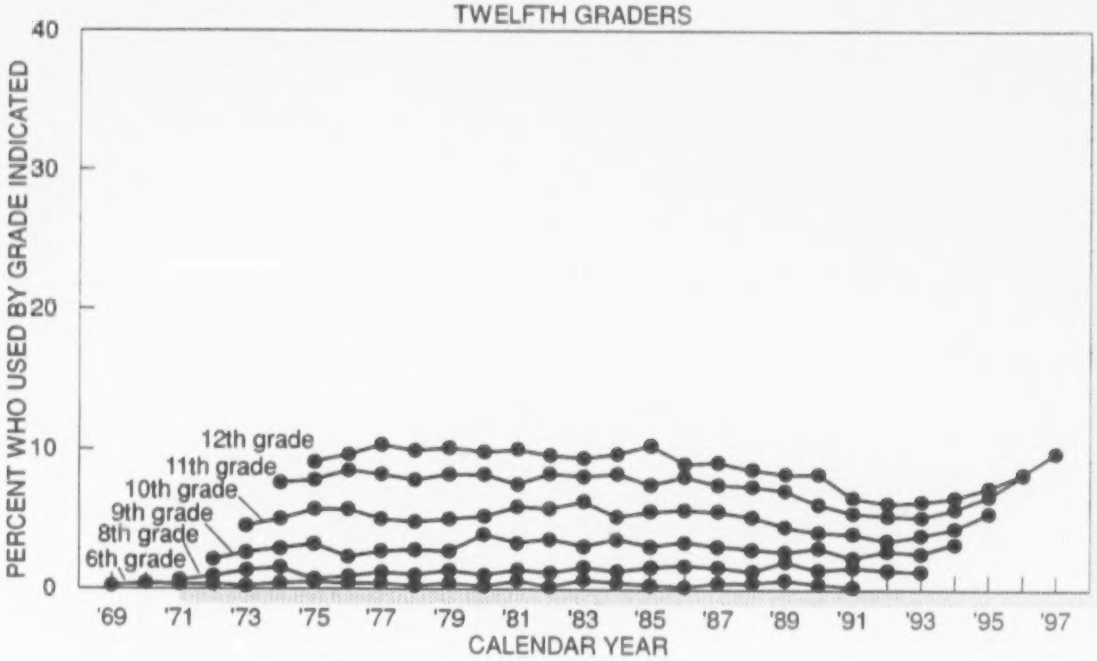


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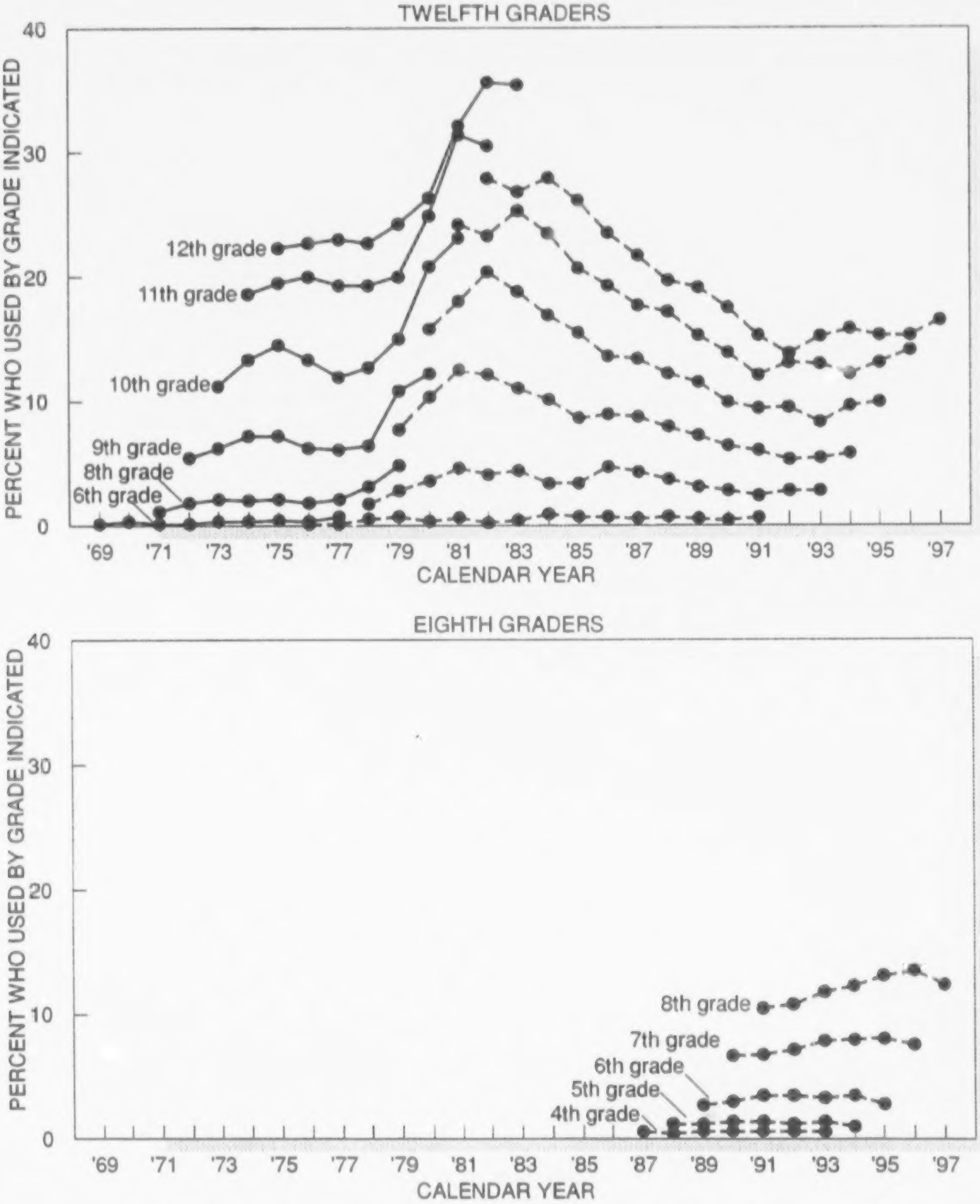
FIGURE 6-1p

Stimulants: Trends in Lifetime Prevalence for Earlier Grade Levels

Based on Retrospective Reports from Twelfth and Eighth Graders



NOTE: The dotted lines connect percentages which result if non-prescription stimulants are excluded.

FIGURE 6-1q

Barbiturates: Trends in Lifetime Prevalence for Earlier Grade Levels

Based on Retrospective Reports from Twelfth Graders

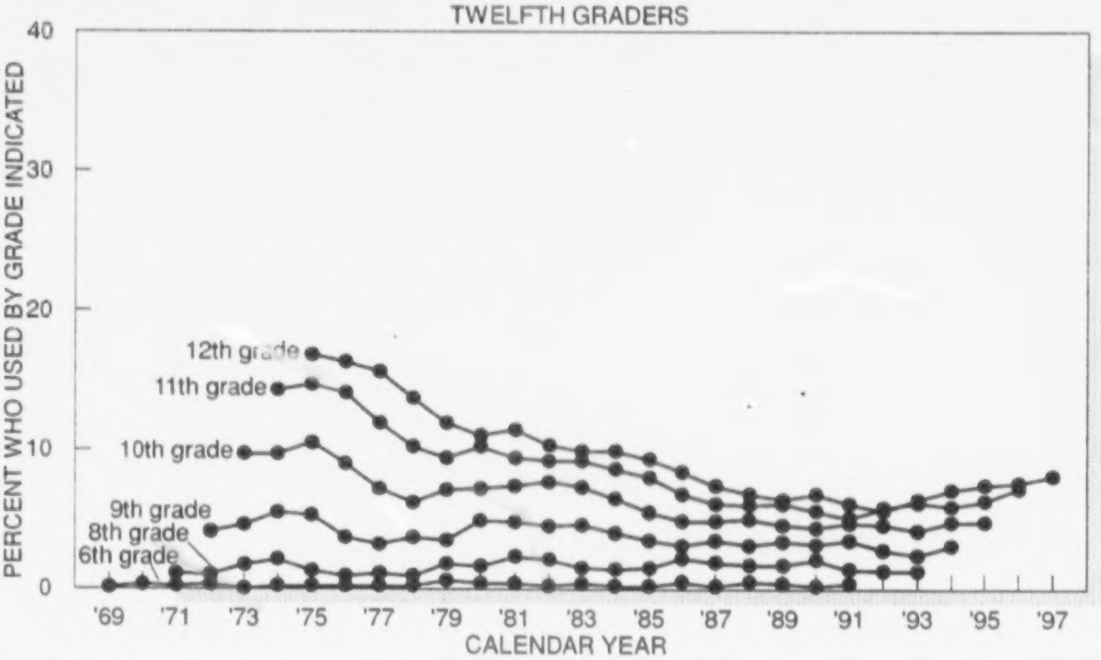


FIGURE 6-1r

Methaqualone: Trends in Lifetime Prevalence for Earlier Grade Levels

Based on Retrospective Reports from Twelfth Graders

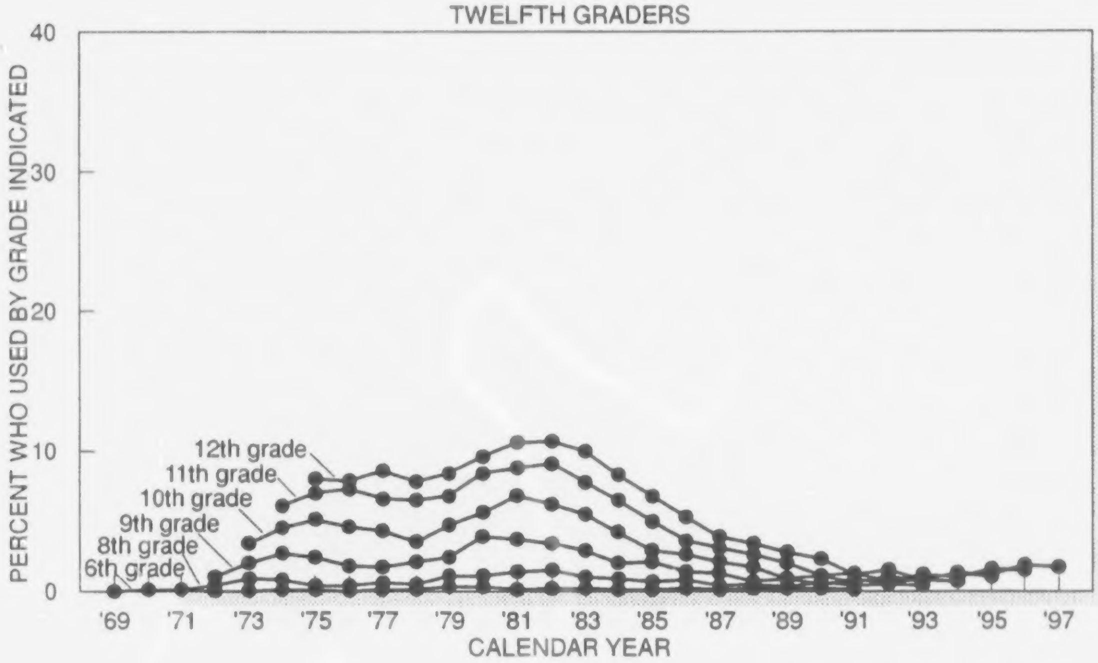
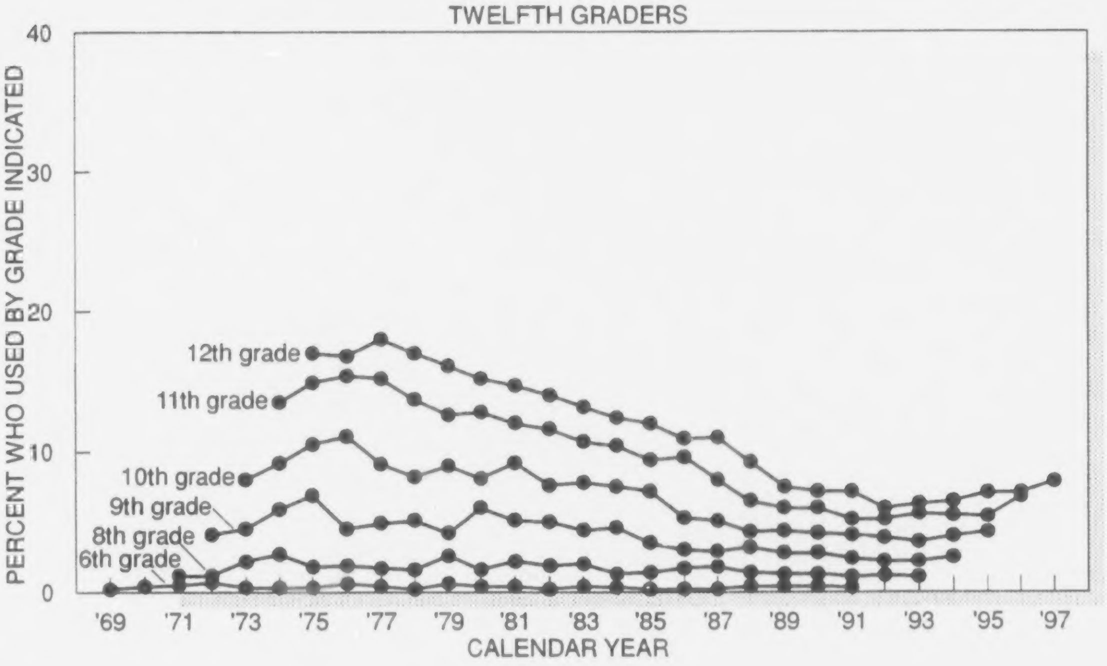


FIGURE 6-1s

Tranquilizers: Trends in Lifetime Prevalence for Earlier Grade Levels

Based on Retrospective Reports from Twelfth and Eighth Graders



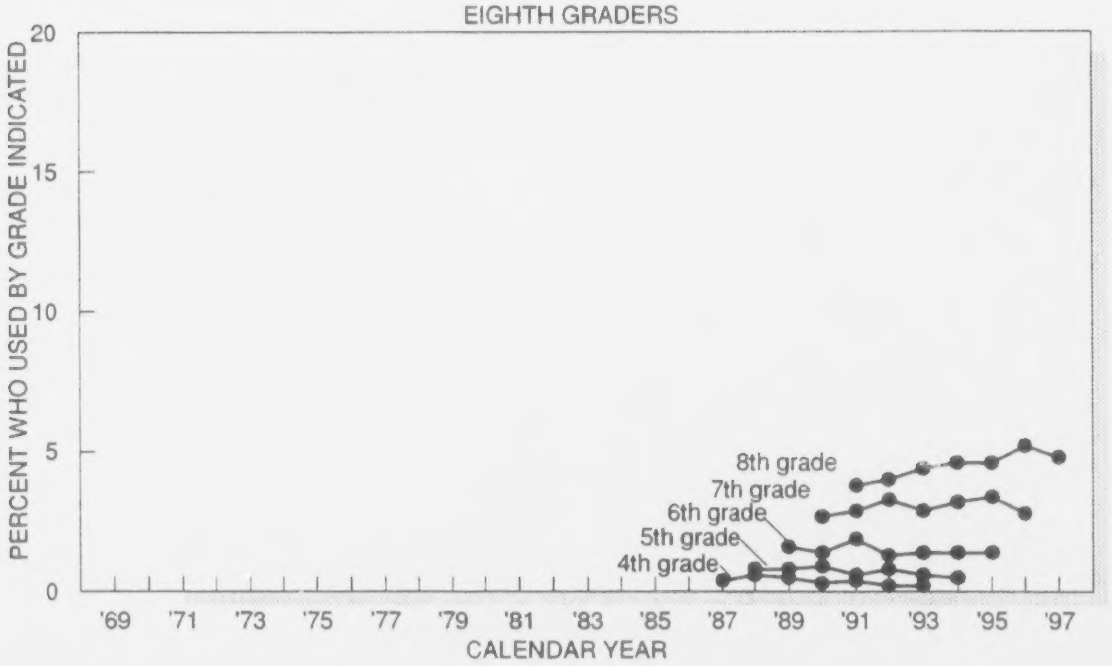
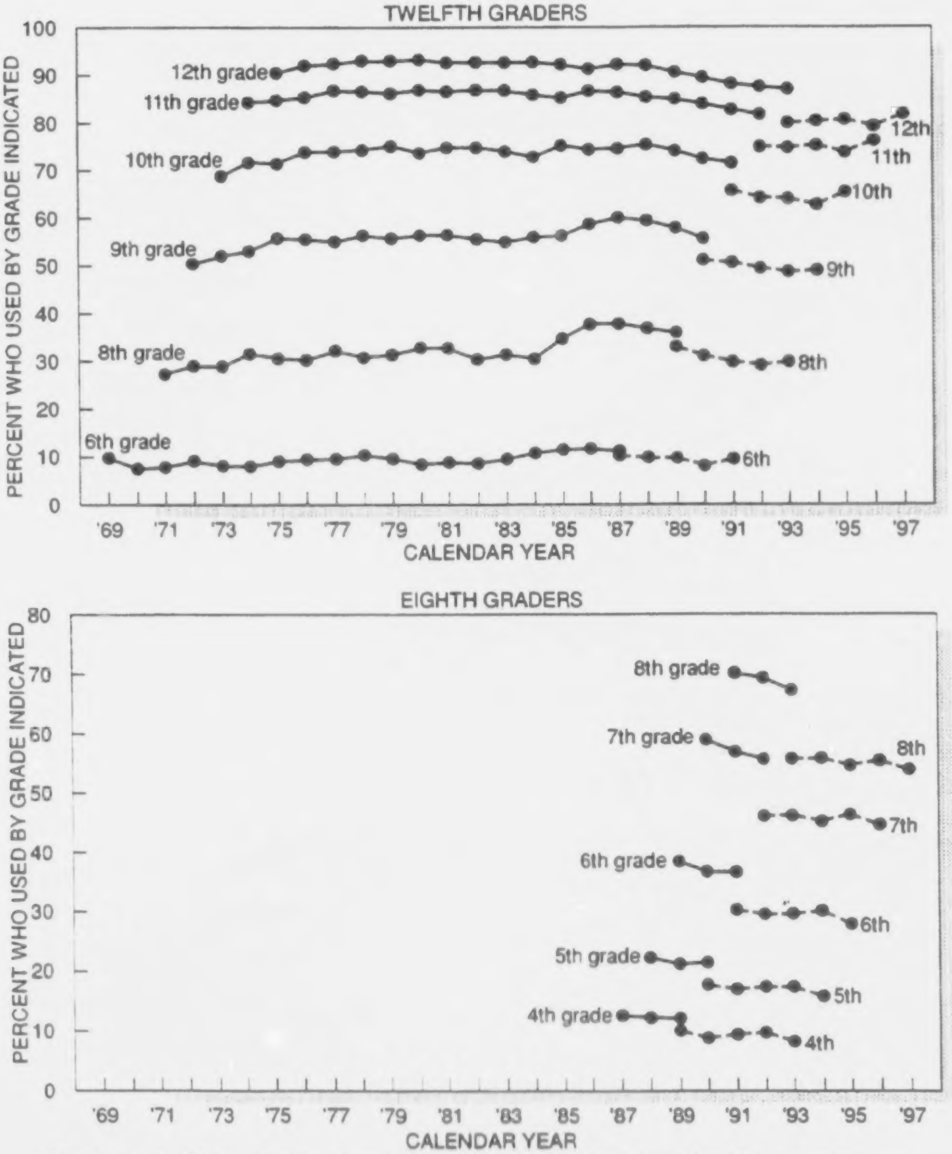


FIGURE 6-1t

Alcohol: Trends in Lifetime Prevalence for Earlier Grade Levels

Based on Retrospective Reports from Twelfth and Eighth Graders

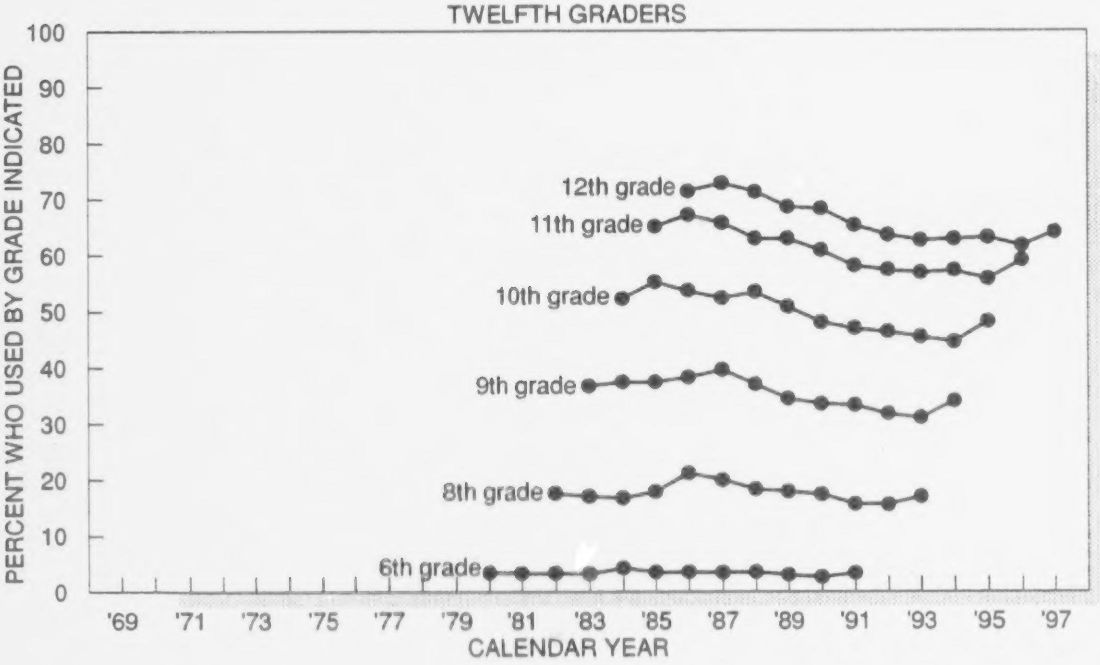


*Beginning in 1993 a revised set of questions on alcohol use was introduced, in which respondents were told that an occasion of use meant "more than just a few sips." The dotted lines connect percentages which are based on data from the revised questions. See text for details.

FIGURE 6-1u

Been Drunk: Trends in Lifetime Prevalence for Earlier Grade Levels

Based on Retrospective Reports from Twelfth and Eighth Graders



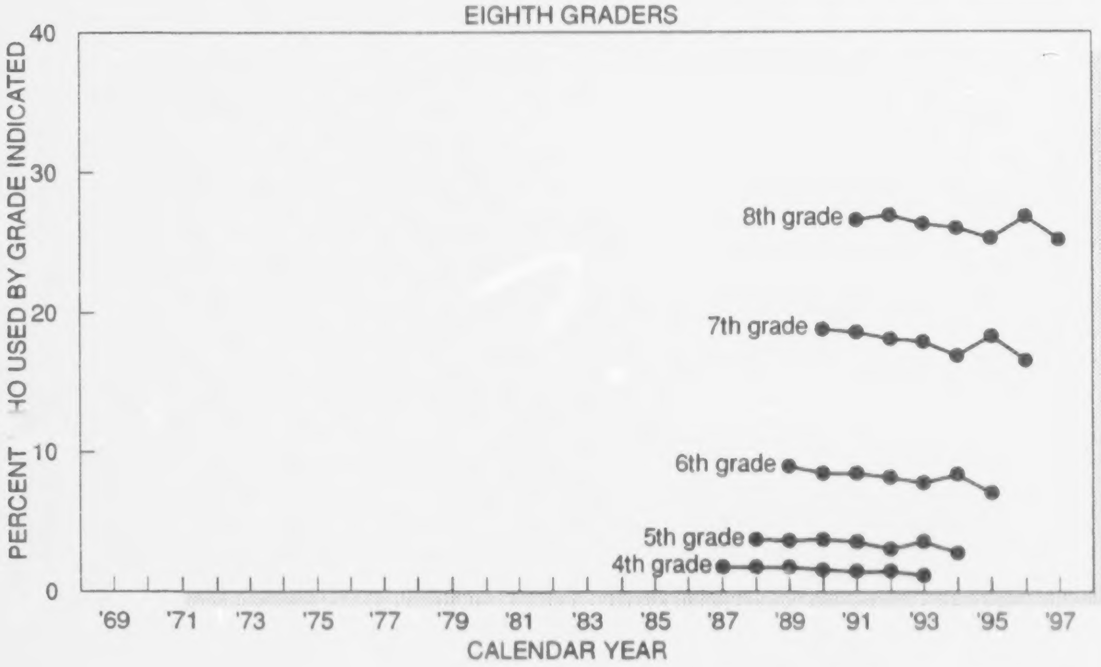


FIGURE 6-1v

Cigarettes: Trends in Lifetime Prevalence for Earlier Grade Levels

Based on Retrospective Reports from Twelfth and Eighth Graders

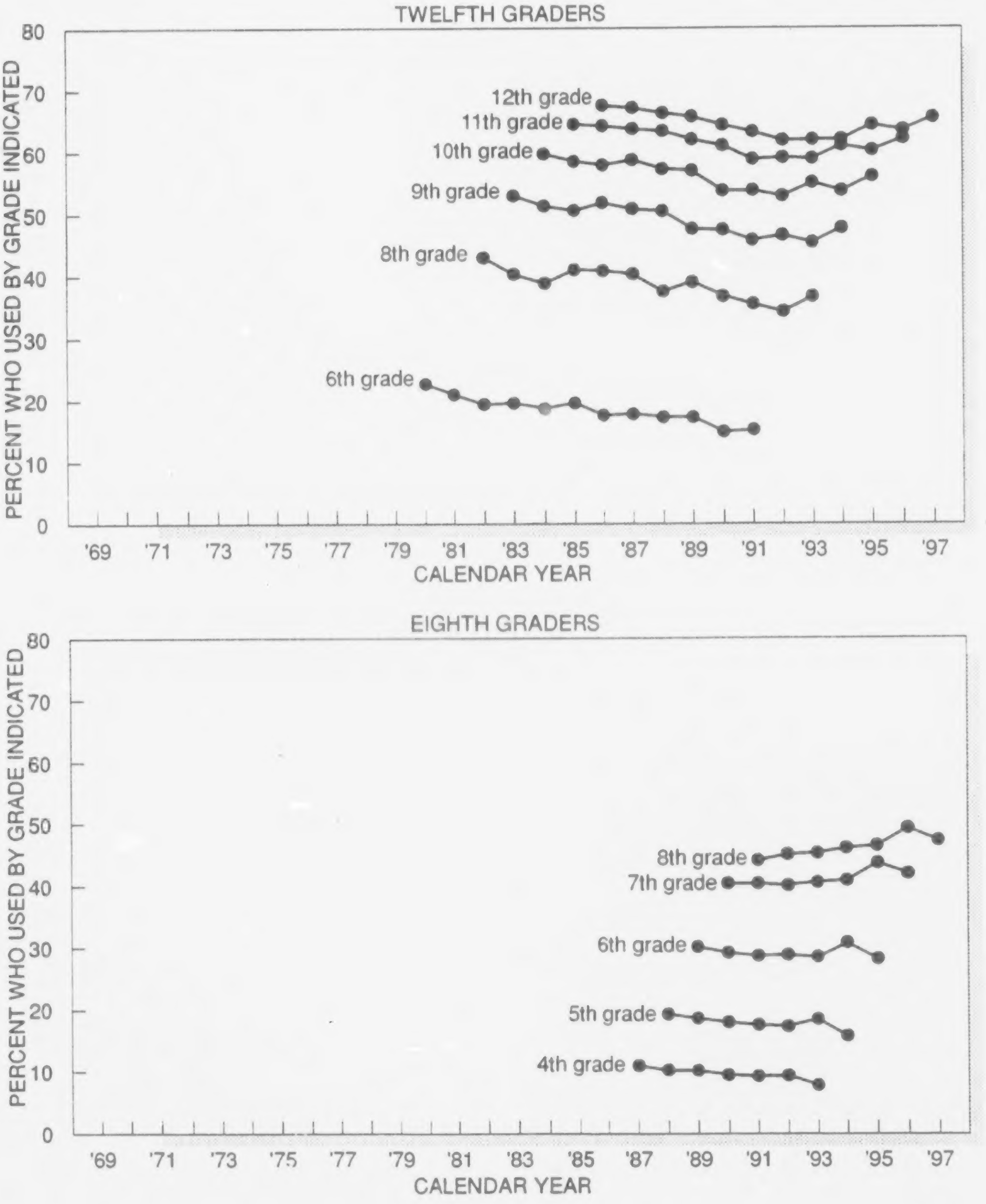
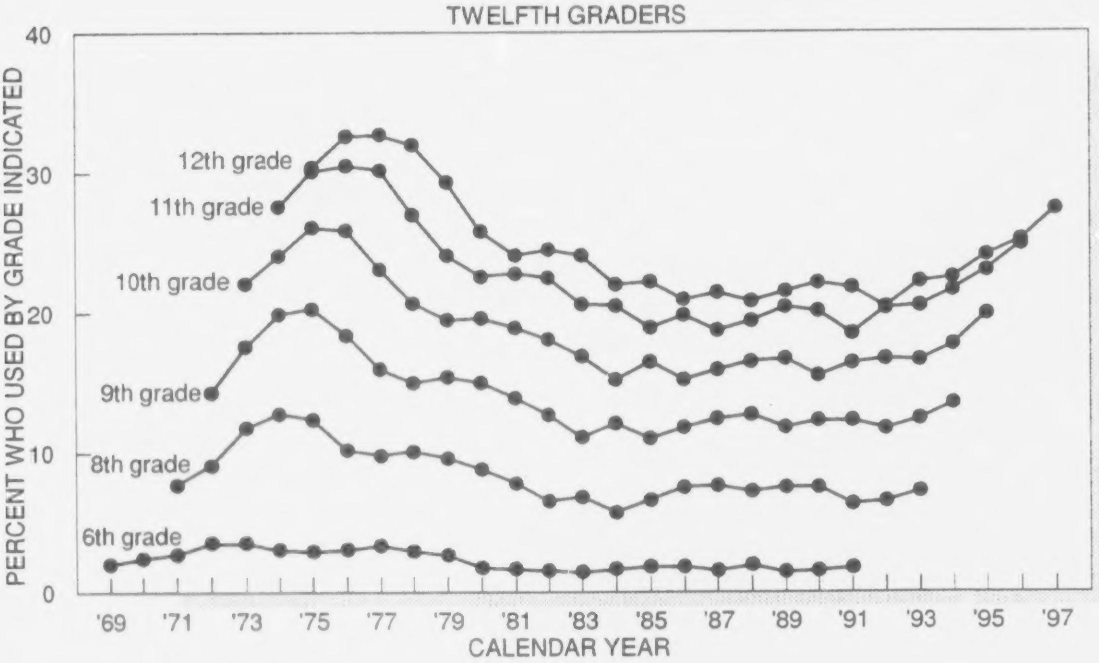


FIGURE 6-1w

Cigarette Smoking on a Daily Basis: Trends in Lifetime Prevalence for Earlier Grade Levels

Based on Retrospective Reports from Twelfth and Eighth Graders



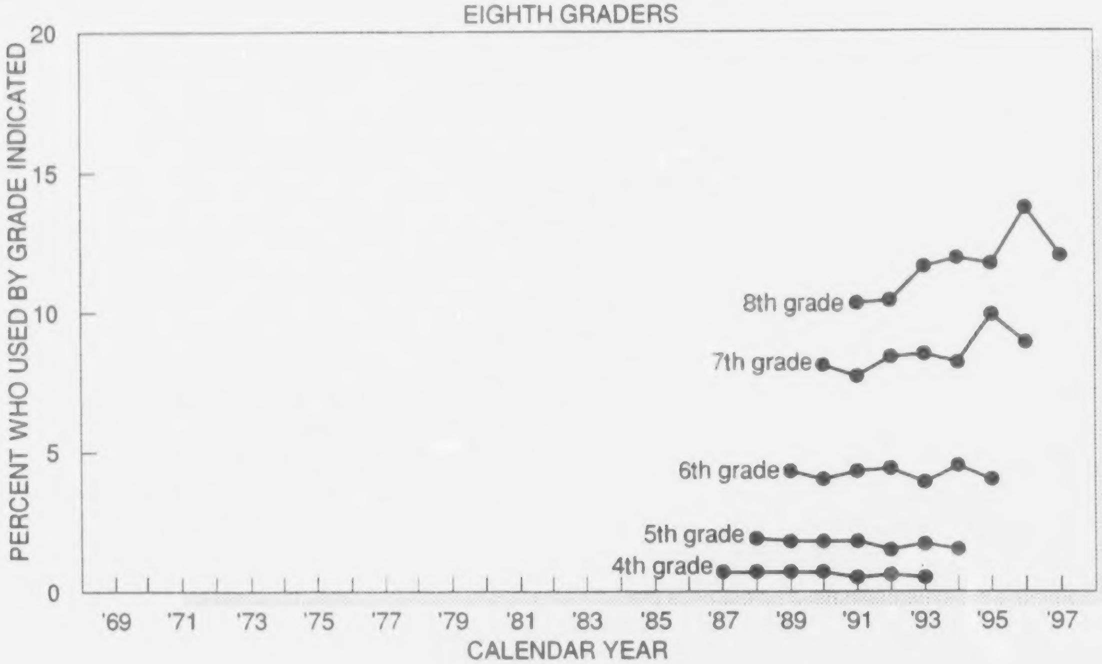


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FIGURE 6-1x

Smokeless Tobacco: Trends in Lifetime Prevalence for Earlier Grade Levels

Based on Retrospective Reports from Twelfth and Eighth Graders

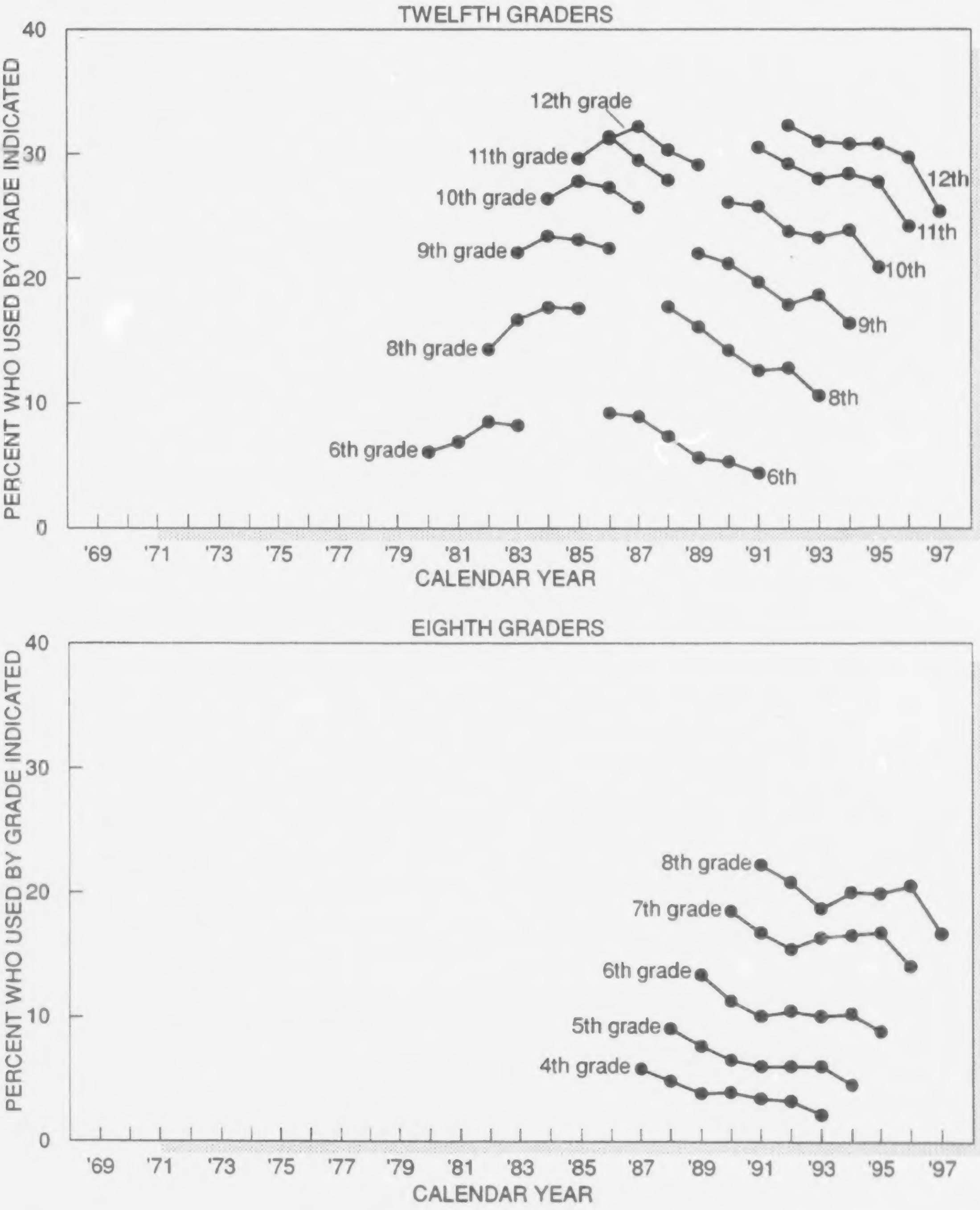
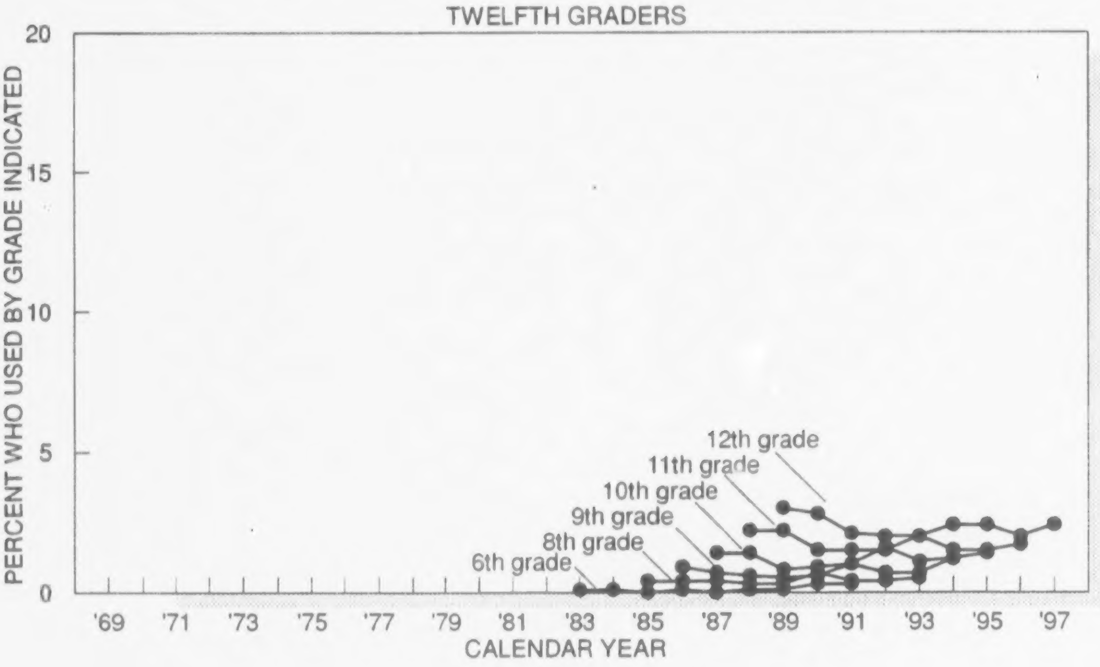
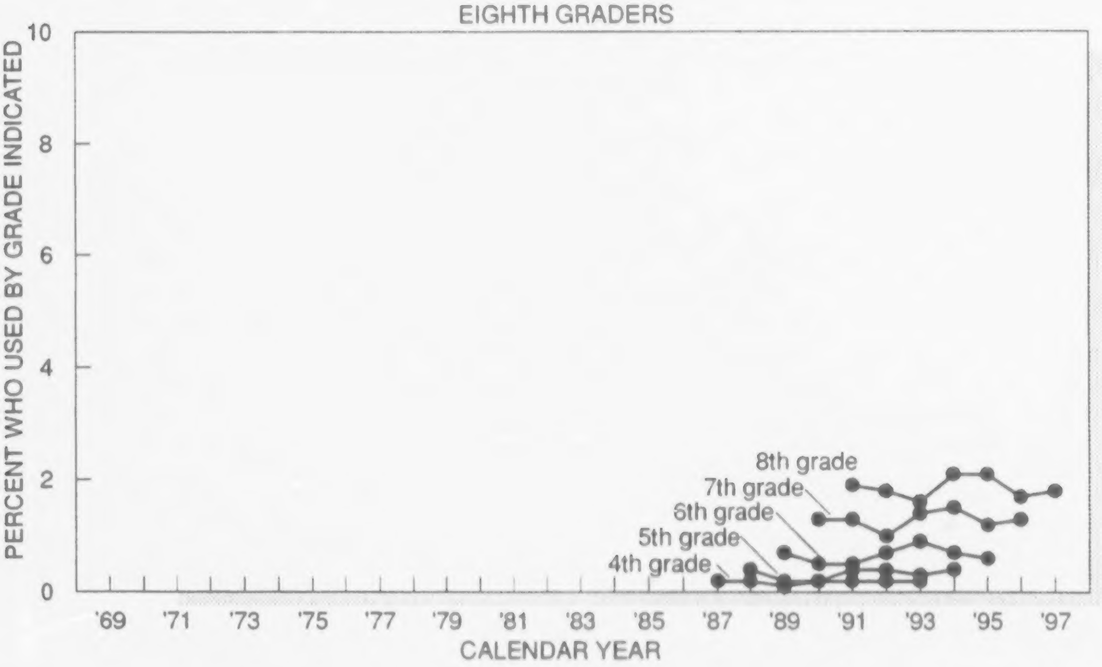


FIGURE 6-1y

Steroids: Trends in Lifetime Prevalence for Earlier Grade Levels

Based on Retrospective Reports from Twelfth and Eighth Graders





Chapter 7

DEGREE AND DURATION OF DRUG HIGHS

Most illicitly used drugs are not purchased in precisely defined (or known) quantities or purities. Therefore, in order to secure indirect measures of the dose or quantity of a drug consumed per occasion, and also to help characterize the typical drug-using event for each type of drug, we have asked twelfth-grade respondents in one of the six questionnaire forms to indicate—for each drug that they report having used in the past twelve months—how high they usually get and how long they usually stay high. The results from those questions are discussed in this chapter, along with trends since 1975 in the degree and duration of the highs usually associated with each of the relevant drugs. Since these questions were not included in the questionnaires administered to eighth and tenth graders, all of the data presented in this chapter are derived from the twelfth-grade respondents.

DEGREE AND DURATION OF HIGHS AMONG TWELFTH GRADERS

Figure 7-1 shows the proportion of 1997 seniors who said that they usually get "very" high, “moderately” high, "a little" high, or “not at all” high when they use a given type of drug. The percentages are based on all respondents who reported use of the given drug class in the previous 12 months, and therefore each bar cumulates to 100%. The ordering from left to right is based on the percentage of users of each drug who reported that they usually get "very" high.. Because the statistics are based on self-reported users in only one of the six questionnaire forms used with seniors, the N’s sometimes are small. The reader is advised to note the sample sizes given in the accompanying tables.

- ***Hallucinogens*** (LSD and hallucinogens other than LSD[37]) and ***heroin*** usually produce intense highs. Beginning in 1982, this question was omitted for heroin because of the small number of cases available each year. An averaging across earlier years indicated that it would rank very close to LSD.

- Following closely in intensity of highs produced are ***cocaine*** and ***marijuana***; about three-quarters of the users of each said they usually get moderately high or very high when using the drug, although more cocaine users said they usually get very high.

- Three of the major psychotherapeutic drug classes—***tranquilizers***, ***stimulants***, and ***opiates other than heroin***—are used less often to get high, but substantial proportions of users (from 39% for stimulants to 55% for other opiates) said they usually get moderately or very high after taking these drugs.

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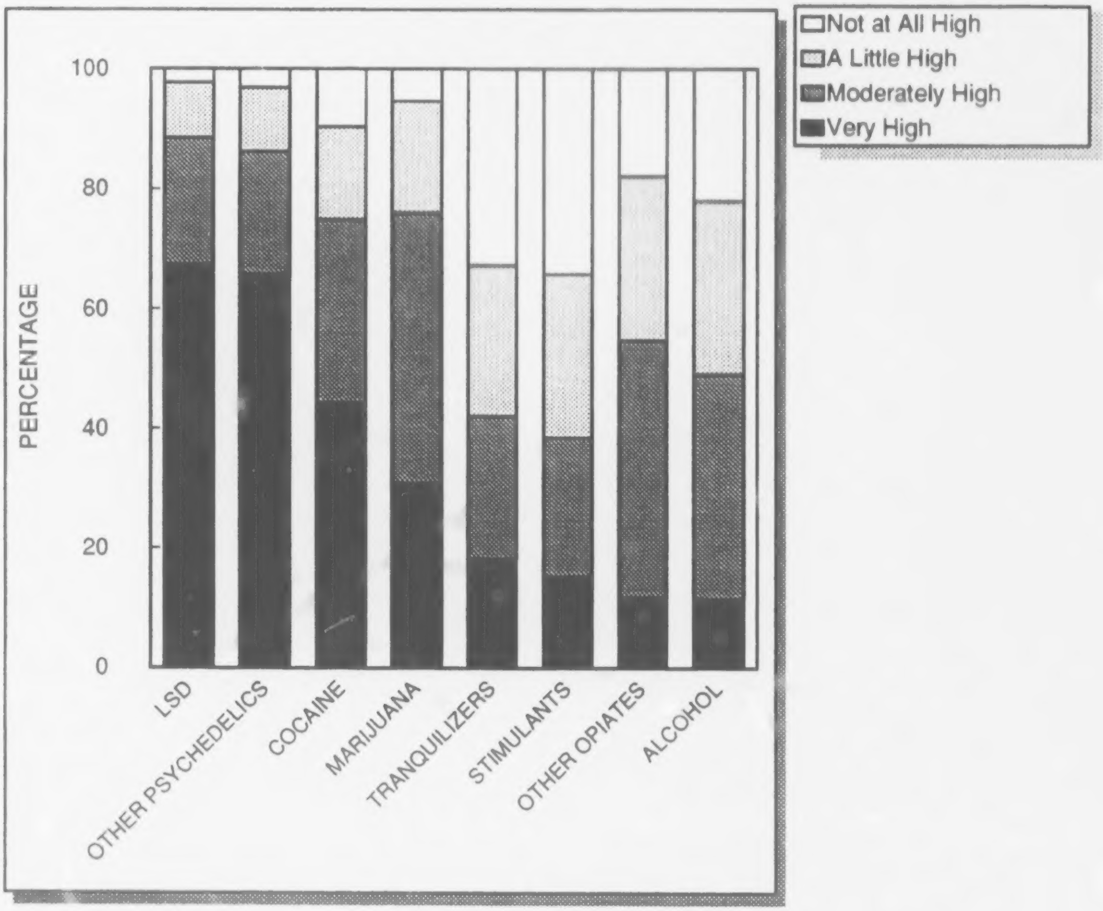
[37] Hallucinogens other than LSD are referred to as "other psychedelics" in Figures 7-1 and 7-2.

FIGURE 7-1

Degree of Drug Highs Attained by Recent Users

Twelfth Graders, 1997



NOTE: Data are based on answers from respondents reporting any use of the drug in the prior twelve months. Heroin is not included in this figure because these particular questions are not asked of the small number of heroin users.

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- Relatively few of the large proportion of twelfth graders using ***alcohol*** said that they usually get very high when drinking, although nearly half said they usually get at least moderately high. For a given individual, we would expect more variability in the degree of intoxication achieved with alcohol from occasion to occasion than with most other drugs. Therefore, many drinkers probably get very high at least sometimes, even if that is not "usually" the case, which is what the question asks.

Figure 7-2 presents the data on the duration of the highs usually obtained by users of each class of drugs. The drugs are arranged in the same order as for intensity of highs to permit an examination of the amount of correspondence between the degree and duration of highs.

- As can be seen in Figure 7-2, those drugs that result in the most intense highs generally tend to result in the longest highs, as well. For example, ***LSD*** and ***hallucinogens other than LSD*** rank one and two, respectively, on both dimensions, with substantial proportions of the users of these drugs (68% and 33%, respectively) saying they usually stay high for seven hours or more.

- Correspondence between degree and duration of highs is not perfect. For example, the highs obtained with ***marijuana*** tend to be relatively intense in degree but not much longer in duration in comparison with many other drugs. Half of marijuana users (50%) said they usually stay high only one to two hours, and the modal duration is one to two hours. Still, well over one-third of the users (37%) reported usually staying high three to six hours, and another 7% usually stay high for seven hours or more.

- Among ***cocaine*** users, 51% stay high one to two hours and 25% stay high three to six hours. More than one in seven (13%) stay high seven or more hours. The remaining 11% said they usually don't get high.

- In sum, drugs vary considerably in both the degree and duration of the highs usually obtained from them. Sizeable proportions of the users of all of these drugs reported that they usually get high for at least three hours per occasion. For a number of drugs—particularly the ***hallucinogens***, but also ***stimulants*** and ***cocaine***—appreciable proportions usually stay high for seven hours or more. (These data obviously do not address the *qualitative* differences in the experiences of being "high.")

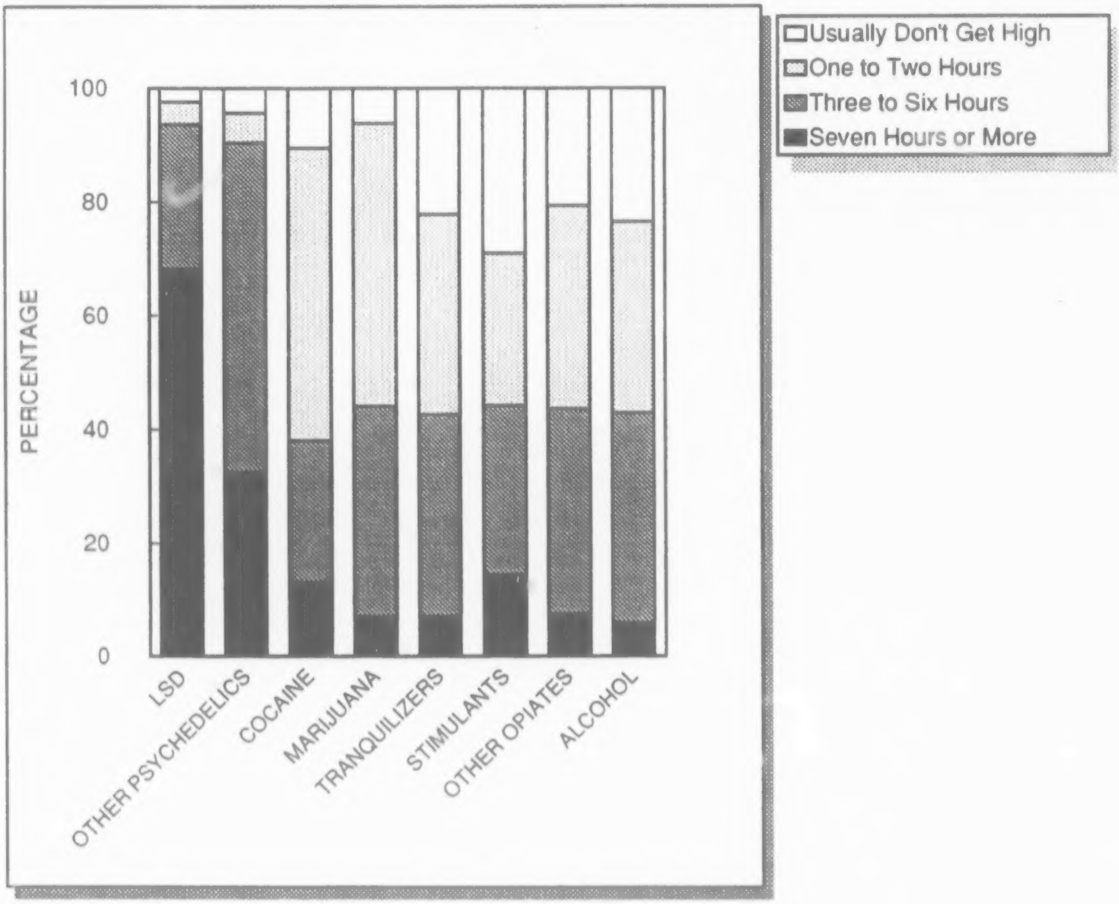
TRENDS IN DEGREE AND DURATION OF DRUG HIGHS

Over the years there have been several important shifts in the degree and duration of highs usually experienced by users of the various drugs. Recall that only those students who used in the prior 12 months answered these questions.

FIGURE 7-2

Duration of Drug Highs Attained by Recent Users

Twelfth Graders, 1997



NOTE: Data are based on answers from respondents reporting any use of the drug in the prior twelve months. Heroin is not included in this figure because these particular questions are not asked of the small number of heroin users.

- The *degree* of high obtained from ***cocaine*** appears to have remained fairly constant since 1981, following a period of some decline in degree of highs obtained as prevalence grew between 1975 and 1981. At the onset phase of the cocaine epidemic (1976-1979), the average *duration* of highs also shortened; the proportion of users reporting highs of two hours or less rose from 30% to 49%. The proportion reporting these short highs continued to rise through 1989 to 64%, which means that during the decline phase of the epidemic (1986-1992) the average duration of cocaine highs decreased further. There has been little change in the duration of cocaine highs since 1989.

- For ***opiates other than heroin***, between 1975 and 1992, there was a general decline both in the intensity of the highs usually experienced and in the duration of those highs. In 1975, 39% said they usually got "very high" vs. 12% by 1992. The proportion usually staying high for seven or more hours dropped from 28% in 1975 to 11% in 1992. This shift occurred, in part, due to a substantial increase in the proportion of users who said they do not take these drugs "to get high" (4% in 1975, increasing to 28% by 1992). Because the actual prevalence of opiate use dropped only modestly over that interval, these findings suggest that an increasing use for self-medication may have masked, to some degree, a decrease in recreational use. Put another way, the drop in recreational use may have been even steeper than one would guess from observing the modest amount of decline in prevalence. Since 1992, there has been a modest increase in the use of other opiates, as well as illicit drugs in general, which has been accompanied by an increase in the degree and duration of the highs experienced by users.

- Between 1975 and 1981, ***stimulant*** use increased among seniors, but the average *degree* of high obtained decreased, much as occurred with cocaine. The proportion of recent users usually getting very high or moderately high fell from 60% in 1975 to 37% in 1981. Consistent with this change, the proportion of users saying they simply "don't take them to get high" increased from 9% in 1975 to 20% by 1981 and remained roughly at that level through 1990. As use has risen some in the 1990s, the numbers on degree and duration of highs have been a bit "bouncy" and have not shown any consistent trends. In general, about a third of the users, when asked how long they usually stay high, said they "usually don't get high."

  Also, the average reported *duration* of stimulant highs was declining over the longer term: 41% of the 1975 users said they usually stay high seven or more hours vs. only 17% of the 1981 users.[38] In 1997, 15% of users said they usually stay high that long.

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[38] In 1982, the questionnaire form containing the questions on degree and duration of highs clarified the amphetamine usage questions to eliminate the inappropriate inclusion of nonprescription stimulants. One might have expected this change to have increased the degree and duration of highs reported, given that real amphetamines would be expected to have greater psychological impact on the average; but the trends still continued downward that year.

These substantial decreases in both the degree and duration of highs between 1975 and 1981 strongly suggest a shift in the purposes for which stimulants were being used. An examination of data on self-reported reasons for use tends to confirm this conclusion. Between the mid-1970s and the mid-1980s, there was a decline in the frequency with which recent users mentioned social/recreational reasons for use and an increase in mentions of use for instrumental purposes.[39] In the late 1980s, there was some decline in the instrumental purposes ("to stay awake," " to get more energy," "to get through the day") and a leveling in the mentions of social/recreational reasons. In the 1990s, as use rose a bit, there was a slight upturn in the mentions of social/recreational reasons.

- With respect to the social/recreational shifts from 1979 to 1984, the percentage of all recent users citing "to feel good or get high" as a reason for stimulant use declined from 58% to 45%; in 1997, the figure was 46%. Similarly, "to have a good time with my friends" declined from 38% to 30% between 1979 and 1984; in 1997, the figure was 33%. There were shifts toward more instrumental use between 1976 and 1984: "to lose weight" increased by 15 percentage points (to 41%); "to get more energy" increased by 13 percentage points (to 69%); "to stay awake" increased by 10 percentage points (to 62%); and "to get through the day" increased by 9 percentage points (to 32%). Since about 1988, these instrumental objectives have been mentioned somewhat less often by users. In 1997, "to lose weight" was mentioned by 34% of recent users, "to get more energy" by 56%, "to stay awake" by 48%, and "to get through the day" by 30%.

- Despite the earlier *relative* decline in recreational reasons for use of stimulants, it also appears that there was at least some increase in the *absolute* level of recreational use, though clearly not as steep an increase as the trends through 1981 in overall use might have suggested. The data on the percentage of seniors exposed to people using amphetamines "to get high or for kicks," which will be discussed further in Chapter 9, showed a definite increase between 1976 and 1981. There was no further increase in exposure to people using for those purposes in 1982, suggesting that recreational use, as well as overall use, had leveled off. Since 1982, there has been a considerable decrease in such exposure (from 50% to 31% of all seniors in 1997), suggesting a substantial drop in the total number of people using stimulants for recreational purposes.

- The degree and duration of highs achieved by ***tranquilizer*** users decreased in the 1980s. While only 15% of the 1980 senior users said they do not usually get high, 35% of the 1990 users said that they do not. However, as use has risen some during the 1990s, the proportion of users saying they do not use tranquilizers to get high has declined to 19% in 1997.

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[39] Johnston, L.D. & O'Malley, P.M. (1986). Why do the nation's students use drugs and alcohol? Self-reported reasons from nine national surveys. *Journal of Drug Issues, 16*, 29-66.

- For ***marijuana*** there was a modest downward trend in the degree of the highs usually obtained between 1978 and 1983—a period of declining use. In 1978, 73% of users said they usually get "moderately high" or "very high," but by 1983 only 64% said so. In the 1990s, this proportion rose, to 76% by 1997 (see Table 7-1a).

Some interesting changes also took place in the average duration of ***marijuana*** highs between 1978 and 1983. Most marijuana users said they usually stay high either one to two hours *or* three to six hours. Between 1975 and 1983 there was a steady decline in the proportion of users saying they stay high three or more hours (from 52% in 1975 to 35% in 1983). Until 1979, the downward shift could have been due almost entirely to the fact that progressively more seniors were using marijuana; and the users in later classes, who might *not* have been users if they had been in earlier classes, probably tended to be relatively light users. We deduce this from the fact that the percentage of *all* seniors reporting three-to-six-hour highs remained relatively unchanged from 1975 to 1979, while the percentage of all seniors reporting only one-to-two-hour highs increased steadily—from 16% in 1975 to 25% in 1979.

After 1979, the overall usage rate declined substantially, but the shift toward shorter average highs continued through 1983. Thus, we must attribute this shift to another factor, and the one that seems most likely is a general shift, even among the most marijuana-prone segment, toward a less frequent (or less intense) use of the drug. The drop in daily prevalence after 1979, which was disproportionately large relative to the drop in overall prevalence, is consistent with this interpretation. Also consistent is the fact that the average number of joints smoked per day (among those who reported any use in the prior month) also dropped. In 1976, 55% of the current users of marijuana indicated that they averaged less than one joint per day in the prior 30 days (but by 1997 this proportion had risen to 61%). In sum, not only were fewer high school students using marijuana than in the early years of this study, but those who were using seemed to be using less frequently and to be taking smaller amounts (and doses of the active ingredient) per occasion, at least through 1988.

FIGURE 7-3

Trends in Annual Prevalence of Marijuana, Percent of Recent Users Getting Moderately or Very High, and Percent of Recent Users Staying High Three or More Hours for Twelfth Graders

TWELFTH GRADERS

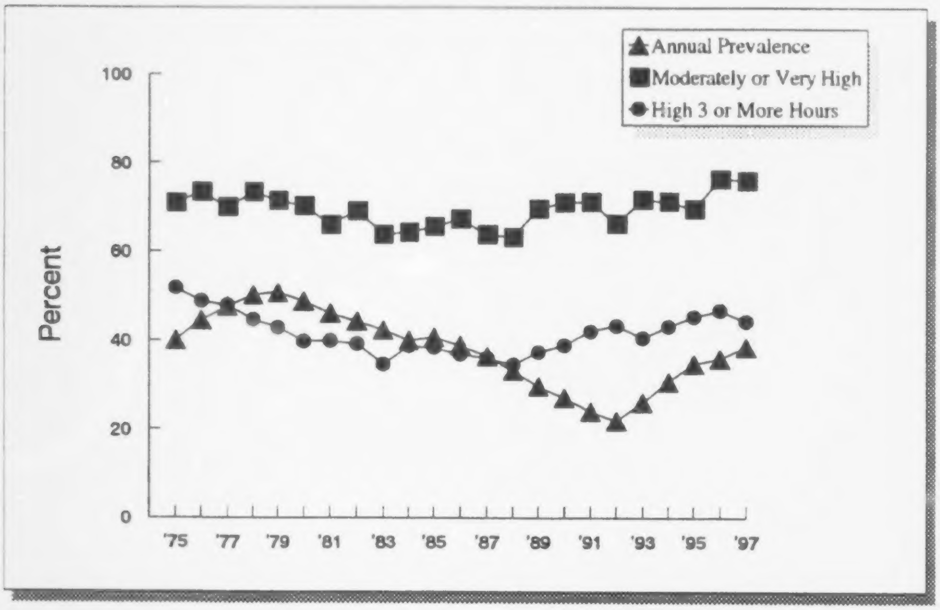

TABLE 7-1a
Marijuana: Trends in Degree and Duration of Feeling High for Twelfth Graders

Q. When you take marijuana or hashish how high do you usually get?[a]	Class of 1975	Class of 1976	Class of 1977	Class of 1978	Class of 1979	Class of 1980	Class of 1981	Class of 1982	Class of 1983	Class of 1984	Class of 1985	Class of 1986	Class of 1987	Class of 1988	Class of 1989	Class of 1990	Class of 1991	Class of 1992	Class of 1993	Class of 1994	Class of 1995	Class of 1996	Class of 1997
Percent of Recent Users																							
Not at all high	6.9	5.7	7.5	6.3	6.0	6.3	4.9	4.6	6.6	6.8	7.2	5.1	6.8	6.6	7.6	5.8	7.2	7.8	9.0	7.0	8.1	5.7	5.4
A little high	22.1	20.9	22.5	20.3	22.5	23.5	29.0	26.3	29.4	29.0	27.2	27.6	29.5	30.2	22.8	23.2	21.6	25.9	19.4	21.7	22.3	17.9	18.6
Moderately high	45.5	47.7	43.5	46.8	47.5	47.7	45.7	45.6	41.9	36.9	41.8	43.8	40.9	40.3	44.1	40.8	42.8	39.3	45.9	40.6	40.8	47.5	45.1
Very high	25.5	25.7	26.5	26.6	24.0	22.6	20.4	23.5	22.0	27.4	23.8	23.5	22.9	22.9	25.5	30.3	28.4	27.0	25.8	30.7	28.8	28.9	30.9
Approx. N =	1142	1266	1448	1873	1606	1495	1607	1588	1366	1264	1298	1177	1174	1142	782	694	591	605	669	779	916	788	998
Percent of All Respondents																							
No use in last 12 months	60.0	55.5	52.4	49.8	49.4	52.4	53.2	54.7	58.2	59.9	59.0	61.2	63.5	64.9	71.6	72.7	76.2	76.8	74.8	69.6	64.1	66.5	61.2
Not at all high	2.8	2.5	3.6	3.2	3.0	3.0	2.3	2.1	2.8	2.7	2.9	2.0	2.5	2.3	2.2	1.6	1.7	1.8	2.3	2.1	2.9	1.9	2.1
A little high	8.8	9.3	10.7	10.2	11.4	11.2	13.6	11.9	12.3	11.6	11.2	10.7	10.7	10.6	6.5	6.3	5.1	6.0	4.9	6.6	8.0	6.0	7.2
Moderately high	18.2	21.2	20.7	23.5	24.0	22.7	21.4	20.6	17.5	14.8	17.2	17.0	14.9	14.1	12.5	11.1	10.2	9.1	11.6	12.4	14.7	15.9	17.5
Very high	10.2	11.4	12.6	13.4	12.2	10.8	9.6	10.6	9.2	11.0	9.8	9.1	8.4	8.1	7.2	8.3	6.7	6.3	6.5	9.3	10.4	9.7	12.0
Approx. N =	2855	2845	3042	3731	3175	3143	3437	3506	3268	3154	3163	3033	3219	3250	2755	2542	2487	2614	2655	2558	2549	2355	2570
Q. When you take marijuana or hashish how long do you usually stay high?[a]																							
Percent of Recent Users																							
Usually don't get high	8.5	8.0	9.5	8.0	8.4	8.5	7.6	7.0	9.9	9.6	9.3	8.2	11.1	9.6	10.8	7.8	8.5	9.5	10.9	9.5	8.7	6.4	6.1
One to two hours	39.7	43.2	42.6	47.4	48.7	51.7	52.5	53.8	55.6	51.7	52.4	55.0	52.9	56.0	51.9	53.3	49.5	47.2	48.6	47.4	46.0	46.9	49.6
Three to six hours	45.4	43.7	42.7	39.0	37.4	35.0	35.7	34.2	30.4	33.1	34.0	32.9	32.2	30.2	33.3	33.1	34.4	37.7	36.8	36.1	37.6	39.3	37.1
Seven to 24 hours	5.9	4.9	4.7	5.1	5.0	4.1	4.0	4.5	3.5	5.0	3.9	3.3	3.7	3.8	3.3	5.4	6.9	4.9	3.2	5.5	6.7	6.2	6.0
More than 24 hours	0.5	0.2	0.6	0.5	0.5	0.7	0.2	0.5	0.6	0.7	0.4	0.6	0.1	0.4	0.8	0.4	0.8	0.8	0.4	1.4	1.0	1.2	1.1
Approx. N =	1141	1261	1449	1873	1619	1500	1607	1593	1357	1268	1295	1176	1172	1147	787	694	589	602	666	774	911	789	996
Percent of All Respondents																							
No use in last 12 months	60.0	55.5	52.4	49.8	49.2	52.3	53.2	54.6	58.4	59.9	59.0	61.2	63.6	64.8	71.5	72.7	76.3	76.9	74.9	69.7	64.2	66.5	61.2
Usually don't get high	3.4	3.6	4.5	4.0	4.3	4.0	3.6	3.2	4.1	3.8	3.8	3.2	4.0	3.4	3.1	2.1	2.0	2.2	2.7	2.9	3.1	2.1	2.4
One to two hours	15.9	19.2	20.3	23.8	24.7	24.6	24.5	24.4	23.1	20.7	21.5	21.3	19.3	19.7	14.8	14.6	11.7	10.9	12.2	14.4	16.5	15.7	19.3
Three to six hours	18.2	19.4	20.3	19.6	19.0	16.7	16.7	15.5	12.7	13.3	13.9	12.8	11.7	10.7	9.5	9.0	8.1	8.7	9.2	11.0	13.5	13.2	14.4
Seven to 24 hours	2.4	2.2	2.2	2.6	2.5	2.0	1.9	2.0	1.4	2.0	1.6	1.3	1.3	1.3	0.9	1.5	1.6	1.1	0.8	1.7	2.4	2.1	2.3
More than 24 hours	0.2	0.1	0.3	0.3	0.2	0.3	0.1	0.2	0.3	0.3	0.2	0.2	0.0	0.1	0.2	0.1	0.2	0.2	0.1	0.4	0.4	0.4	0.4
Approx. N =	2853	2834	3044	3731	3188	3149	3437	3511	3259	3158	3160	3032	3218	3255	2760	2542	2485	2611	2652	2553	2544	2356	2568

NOTE: '—' indicates data not available.
SOURCE: The Monitoring the Future Study, the University of Michigan.

[a] These questions appear in just one form. They are asked only of respondents who report use of the drug in the prior twelve months (i.e., "recent users").

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The fact that ***marijuana*** highs became less intense through the 1980s is of particular interest in light of the evidence from other sources that the THC content of marijuana had risen substantially since the late 1970s. The evidence here would suggest that users have titrated their intake to achieve a certain (perhaps declining) level of high and, thus, are smoking less marijuana as measured by volume.

- There are no clearly discernible long-term patterns in the intensity or duration of the highs being experienced by users of ***LSD*** or ***hallucinogens other than LSD***, with the slight exception that the average duration of LSD highs dropped some from the mid-1970s to the early 1980s (as use declined) and then rose some through the 1990s (as use increased).

- Data are not collected for highs experienced in the use of ***inhalants***, the specific ***nitrites***, ***PCP***, or ***heroin***.

- The intensity and duration of highs associated with ***alcohol*** use generally have been stable throughout the study period (see Table 7-1b), with the exceptions: (1) that the proportion of all seniors who report getting "very high" has risen some in the last few years (from 5.6% in 1993 to 8.7% in 1997), and (2) that the proportion saying they usually stay high on alcohol for 7 hours or more has risen slightly over the same interval (from 3.4% to 4.6%).

TABLE 7-1b
Alcohol: Trends in Degree and Duration of Feeling High for Twelfth Graders

Q When you drink alcoholic beverages how high do you usually get?[a]	Class of 1975	Class of 1976	Class of 1977	Class of 1978	Class of 1979	Class of 1980	Class of 1981	Class of 1982	Class of 1983	Class of 1984	Class of 1985	Class of 1986	Class of 1987	Class of 1988	Class of 1989	Class of 1990	Class of 1991	Class of 1992	Class of 1993	Class of 1994	Class of 1995	Class of 1996	Class of 1997
Percent of Recent Users																							
Not at all high	23.6	21.6	20.6	19.1	19.6	20.7	18.9	18.9	18.8	19.0	19.7	18.5	18.8	20.0	22.1	23.0	20.6	24.2	23.8	19.7	20.7	23.2	22.0
A little high	33.8	32.3	32.8	33.9	33.6	32.6	33.8	32.6	35.8	34.0	34.8	34.7	34.4	34.2	34.4	32.3	36.8	32.5	32.2	32.7	32.6	29.9	28.9
Moderately high	35.9	38.0	39.6	39.9	38.7	39.7	41.4	40.9	38.8	39.2	38.5	39.8	38.8	38.2	35.9	36.2	34.0	35.6	36.5	38.3	36.5	35.5	37.5
Very high	6.6	8.1	7.0	7.1	8.1	7.0	5.8	7.5	6.7	7.8	7.1	7.1	8.0	7.6	7.6	8.5	8.6	7.7	7.5	9.2	10.1	11.4	11.6
Approx. N =	2419	2368	2578	3124	2764	2709	2912	2958	2808	2601	2618	2531	2718	2755	2211	1965	1898	1965	1960	1866	1867	1664	1915
Percent of All Respondents																							
No use in last 12 months	15.2	14.3	13.0	12.3	12.5	13.2	14.7	14.1	14.1	17.1	16.1	16.0	14.6	14.8	18.8	21.2	22.7	23.6	25.4	26.4	25.7	28.2	24.7
Not at all high	20.0	18.5	17.9	16.8	17.2	18.0	16.2	16.2	16.2	15.8	16.5	15.5	16.0	17.0	18.0	18.1	15.9	18.5	17.8	14.5	15.4	16.6	16.6
A little high	28.7	27.7	28.5	29.7	29.4	28.3	28.9	28.0	30.7	28.2	29.2	29.1	29.4	29.2	28.0	25.5	28.5	24.8	24.0	24.1	24.2	21.5	21.8
Moderately high	30.4	32.6	34.5	35.0	33.8	34.4	35.3	35.2	33.3	32.5	32.3	33.4	33.1	32.6	29.2	28.5	26.3	27.2	27.2	28.2	27.1	25.5	28.2
Very high	5.6	6.9	6.1	6.2	7.1	6.1	5.0	6.5	5.7	6.5	5.9	6.0	6.8	6.5	6.1	6.7	6.7	5.9	5.6	6.8	7.5	8.2	8.7
Approx. N =	2853	2763	2963	3562	3159	3122	3413	3443	3268	3137	3120	3011	3183	3232	2721	2493	2454	2572	2627	2533	2514	2318	2542
Q When you drink alcoholic beverages how long do you usually stay high?[a]																							
Percent of Recent Users																							
Usually don't get high	25.7	24.6	22.6	21.3	21.7	22.7	20.9	20.5	21.4	20.3	21.5	20.9	20.8	22.9	24.2	24.7	23.0	27.0	26.1	22.5	23.2	25.3	23.5
One to two hours	40.5	38.5	38.8	39.8	41.9	39.5	40.3	41.3	40.8	42.2	41.5	40.6	43.8	42.0	41.3	39.4	40.1	37.3	38.8	40.5	36.7	33.1	33.6
Three to six hours	30.1	33.8	34.8	35.7	32.7	33.8	35.6	34.4	33.7	33.1	33.5	34.9	31.5	32.1	31.6	31.7	31.7	30.7	30.4	32.2	34.2	35.7	36.9
Seven to 24 hours	3.4	3.0	3.5	3.1	3.4	3.8	3.1	3.4	3.9	4.0	3.1	3.2	3.7	2.9	2.8	4.0	4.6	4.7	4.3	4.2	5.4	5.3	5.2
More than 24 hours	0.2	0.2	0.3	0.1	0.2	0.2	0.1	0.4	0.3	0.3	0.4	0.4	0.2	0.1	0.2	0.3	0.6	0.3	0.3	0.6	0.6	0.5	0.9
Approx. N =	2403	2358	2547	3098	2746	2697	2892	2947	2792	2588	2608	2509	2711	2748	2202	1949	1884	1951	1950	1857	1849	1657	1897
Percent of All Respondents																							
No use in last 12 months	15.2	14.3	13.0	12.3	12.6	13.3	14.8	14.1	14.1	17.1	16.1	16.1	14.7	14.8	18.8	21.3	22.8	23.7	25.5	26.4	25.9	28.3	24.8
Usually don't get high	21.8	21.1	19.7	18.7	19.0	19.7	17.8	17.6	18.3	16.9	18.0	17.5	17.8	19.5	19.6	19.4	17.8	20.6	19.5	16.5	17.2	18.2	17.6
One to two hours	34.3	33.0	33.8	34.9	36.6	34.2	34.3	35.5	35.0	35.0	34.8	34.1	37.4	35.8	33.5	31.0	31.0	28.5	28.9	29.8	27.2	23.7	25.3
Three to six hours	25.5	29.0	30.3	31.3	28.6	29.3	30.4	29.6	28.9	27.4	28.1	29.3	26.9	27.3	25.6	24.9	24.4	23.4	22.7	23.7	25.3	25.6	27.7
Seven to 24 hours	2.9	2.6	3.0	2.7	3.0	3.3	2.7	2.9	3.3	3.4	2.6	2.7	3.2	2.5	2.2	3.2	3.5	3.6	3.2	3.1	4.0	3.8	3.9
More than 24 hours	0.2	0.2	0.3	0.1	0.2	0.2	0.1	0.3	0.2	0.2	0.3	0.4	0.2	0.1	0.2	0.2	0.5	0.2	0.2	0.4	0.4	0.4	0.7
Approx. N =	2834	2751	2928	3532	3142	3109	3393	3431	3252	3124	3110	2990	3177	3226	2712	2477	2441	2558	2616	2525	2496	2311	2524

NOTE: '—' indicates data not available.
SOURCE: The Monitoring the Future Study, the University of Michigan.

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[a] These questions appear in just one form. They are asked only of respondents who report use of the drug in the prior twelve months (i.e., "recent users").

Chapter 8

ATTITUDES AND BELIEFS ABOUT DRUG USE

When this study was launched in 1975, we allocated a considerable amount of questionnaire content to the measurement of certain attitudes and beliefs related to drug use—ones that we believed might prove important in explaining young people's use of drugs. Over the years, this has proven to be a particularly fruitful investment.

In this section we present the cross-time results for three of these sets of attitude and belief questions. One set concerns students' beliefs about how harmful the various kinds of drug use are for the user; the second concerns the degree to which students personally disapprove of various kinds of drug use; and the third, asked only of seniors, deals with their attitudes about various forms of legal prohibition. Chapter 9 will present results on the closely related topics of parents' and friends' attitudes about drugs, as students perceive them.

The data to be presented below show inverse relationships at the aggregate level between (a) level of reported use of a drug and (b) level of perceived risk and disapproval of using that drug. For example, of the illicit drugs, marijuana has the highest level of use, and one of the lowest levels of perceived risk and disapproval of its use. These relationships suggest that individuals who believe that the use of a particular drug involves risk of harm and/or who disapprove of its use are less likely to use that drug. A series of individual-level analyses of these data confirms this conclusion: strong correlations exist between individuals' use of drugs and their various attitudes and beliefs about using those drugs. Those seniors who use a given drug also are less likely to disapprove of its use or to see it as dangerous, and they are more likely to report their own parents and friends as being accepting of its use.

Many of the attitudes and beliefs about drug use reported below have changed dramatically during the life of the study, as have actual drug-using behaviors. Beginning in 1979, scientists, policy makers, and, in particular, the electronic and print media, gave considerable attention to the increasing levels of regular marijuana use among young people that were being documented by this study and to the potential hazards associated with such use. As will be seen below, attitudes and beliefs about regular use of marijuana shifted in a more conservative direction after 1979—a shift that coincided with a reversal in the previous rapid rise of daily use and that very likely reflected the impact of the increased public attention. Between 1986 and 1987, a similar and even more dramatic shift occurred for cocaine and continued for some years. During much of the 1990s, however, there was an important turnaround in these attitudes, accompanied by an increase in the use of quite a number of the illicit drugs, in particular marijuana.

PERCEIVED HARMFULNESS OF DRUG USE

Beliefs about Harmfulness Among Twelfth Graders

- For many drugs, the level of risk attributed to use varies considerably with the level of use. Expecting this to be the case, we structured the questions to differentiate among "using once or twice," "using regularly," and (for some drugs) "using occasionally."

- A substantial majority of high school seniors perceive that *regular* use of ***any of the illicit drugs*** entails a great risk of harm for the user. As Table 8-2 shows, almost 90% of the seniors perceive a great risk of harm from regular use of ***cocaine, crack, cocaine powder***, and ***heroin***. Additionally, the proportions attributing great risk to regular use of ***LSD, amphetamines***, and ***barbiturates*** are 77%, 66%, and 57%, respectively.

- Regular use of ***marijuana*** is judged to involve great risk by 58% of the seniors.

- Over two-thirds of all seniors (69%) judge regular use of ***cigarettes*** (i.e., one or more packs a day) as entailing a great risk of harm for the user.

- Regular use of ***alcohol*** is more explicitly defined in several questions providing greater specificity on the amount of use. A quarter of seniors (25%) associate great risk of harm with having one or two drinks nearly every day, fewer than half (43%) think there is great risk involved in having five or more drinks once or twice each weekend, and fewer than two-thirds (63%) think the user takes a great risk in consuming four or five drinks nearly every day. It is noteworthy that more than one-third do not view even heavy daily drinking as entailing great risk.

- Far fewer respondents feel that a person runs a great risk of harm by simply trying a drug once or twice—what we refer to as *experimental use*. Still, substantial proportions of high school seniors view even the experimental use of most of the illicit drugs as risky. The percentages associating great risk with experimental use rank as follows: 67% for ***steroids***; 57% for ***heroin***, 54% for ***cocaine, crack,*** and ***ice***; 51% for ***cocaine powder***, 49% for ***PCP***, 35% for ***LSD***, 31% for ***amphetamines***, and 27% for ***barbiturates***.

- Only 15% of seniors see experimenting with ***marijuana*** as entailing great risk.

- Just 7% of seniors believe there is much risk involved in trying an ***alcoholic beverage*** once or twice.

Beliefs about Harmfulness Among Eighth and Tenth Graders

An abbreviated set of the same questions on harmfulness has been asked of eighth and tenth graders since 1991. Questions also were added about the perceived harmfulness of using ***inhalants*** (see Table 8-1). Perceived risk questions for ***LSD*** use were added in 1993. Although the findings are quite similar to those for seniors in general, there are some interesting differences.

- The most important difference is observed for ***regular cigarette smoking***. Unfortunately, perceived risk is lowest at the ages when initiation is most likely to occur; while two-thirds of seniors (69%) see great risk in smoking a pack a day or more, fewer (60%) of the tenth graders and only one-half (53%) of the eighth graders do.

- Regular use of ***smokeless tobacco*** is viewed as entailing great risk by about one-third (35%) of eighth graders, 42% of tenth graders, and 39% of twelfth graders. Again, because this behavior is often initiated at early ages, these figures are disturbingly low.

- In contrast to tobacco use, the younger students are somewhat more likely than seniors to see ***marijuana*** use as dangerous.

- Tenth graders are most likely to see the use of ***cocaine powder*** and ***crack*** as dangerous. This unusual pattern has been replicated every year since 1991.

- Eighth- and tenth-grade students are slightly more likely than twelfth graders to see weekend ***binge drinking*** as dangerous, while their views on ***daily drinking*** and experimentation are not much different from seniors.

- Experimentation with ***inhalants*** is seen as dangerous by relatively low proportions of eighth graders (40%) and tenth graders (48%), which may well explain the widespread use of inhalants at these ages. (The question is not asked of twelfth graders.)

TRENDS IN PERCEIVED HARMFULNESS OF DRUG USE

Trends in Perceived Harmfulness Among Twelfth Graders

Several very important trends in the beliefs about the dangers associated with using various drugs have occurred over the life of the study (see Table 8-2 and Figures 8-1a through 8-11a.)

- Some of the most important trends have involved ***marijuana*** (Figure 8-1a). From 1975 through 1978, the degree of harmfulness perceived to be associated with all levels of marijuana use declined and use increased sharply (Figure 8-4). In 1979, for the first time, the proportion of seniors

TABLE 8-1

Trends in Harmfulness of Drugs as Perceived by Eighth, Tenth, and Twelfth Graders, 1991–97

Percentage saying "great risk"[a]

How much do you think people risk harming themselves (physically or in other ways), if they . . .	8th Grade								10th Grade								12th Grade							
	1991	1992	1993	1994	1995	1996	1997	'96–'97 change	1991	1992	1993	1994	1995	1996	1997	'96–'97 change	1991	1992	1993	1994	1995	1996	1997	'96–'97 change
Try marijuana once or twice	40.4	39.1	36.2	31.6	28.9	27.9	25.3	-2.6sss	30.0	31.9	29.7	24.4	21.5	20.0	18.8	-1.2	27.1	24.5	21.9	19.5	16.3	15.6	14.9	-0.7
Smoke marijuana occasionally	57.9	56.3	53.8	48.6	45.9	44.3	43.1	-1.2	48.6	48.9	46.1	38.9	35.4	32.8	31.9	-0.9	40.6	39.6	35.6	30.1	25.6	25.9	24.7	-1.2
Smoke marijuana regularly	83.8	82.0	79.6	74.3	73.0	70.9	72.7	+1.8	82.1	81.1	78.5	71.3	67.9	65.9	65.9	0.0	78.6	76.5	72.5	65.0	60.8	59.9	58.1	-1.8
Try inhalants once or twice[b]	35.9	37.0	36.5	37.9	36.4	40.8	40.1	-0.7	37.8	38.7	40.9	42.7	41.6	47.2	47.5	+0.3	—	—	—	—	—	—	—	—
Try inhalants regularly[b]	65.6	64.4	64.6	65.5	64.8	68.2	68.7	+0.5	69.8	67.9	69.6	71.5	71.8	75.8	74.5	-1.3	—	—	—	—	—	—	—	—
Take LSD once or twice[c]	—	—	42.1	38.3	36.7	36.5	37.0	+0.5	—	—	48.7	46.5	44.7	45.1	44.5	-0.6	46.6	42.3	39.5	38.8	36.4	36.2	34.7	-1.5
Take LSD regularly[c]	—	—	68.3	65.8	64.4	63.6	64.1	+0.5	—	—	78.9	75.9	75.5	75.3	73.8	-1.5	84.3	81.8	79.4	79.1	78.1	77.8	76.6	-1.2
Try crack once or twice[b]	62.8	61.2	57.2	54.4	50.8	51.0	49.9	-1.1	70.4	69.6	66.6	64.7	60.9	60.9	59.2	-1.7	60.6	62.4	57.6	58.4	54.6	56.0	54.0	-2.0
Take crack occasionally[b]	82.2	79.6	76.8	74.4	72.1	71.6	71.2	-0.4	87.4	86.4	84.4	83.1	81.2	80.3	78.7	-1.6	76.5	76.3	73.9	73.8	72.8	71.4	70.3	-1.1
Try cocaine powder once or twice[b]	55.5	54.1	50.7	48.4	44.9	45.2	45.0	-0.2	59.1	59.2	57.5	56.4	53.5	53.6	52.2	-1.4	53.6	57.1	53.2	55.4	52.0	53.2	51.4	-1.8
Take cocaine powder occasionally[b]	77.0	74.3	71.8	69.1	66.4	65.7	65.8	+0.1	82.2	80.1	79.1	77.8	75.6	75.0	73.9	-1.1	69.8	70.8	68.6	70.6	69.1	68.8	67.7	-1.1
Try heroin once or twice without using a needle[c]	—	—	—	—	60.1	61.3	63.0	+1.7	—	—	—	—	70.7	72.1	73.1	+1.0	—	—	—	—	55.6	58.6	60.5	+1.9
Take heroin occasionally without using a needle[c]	—	—	—	—	76.8	76.6	79.2	+2.6	—	—	—	—	85.1	85.8	86.5	+0.7	—	—	—	—	71.2	71.0	74.3	+3.3s
Try one or two drinks of an alcoholic beverage (beer, wine, liquor)	11.0	12.1	12.4	11.6	11.6	11.8	10.4	-1.4s	9.0	10.1	10.9	9.4	9.3	8.9	9.0	+0.1	9.1	8.6	8.2	7.6	5.9	7.3	6.7	-0.6
Take one or two drinks nearly every day	31.8	32.4	32.6	29.9	30.5	28.6	29.1	+0.5	36.1	36.8	35.9	32.5	31.7	31.2	31.8	+0.6	32.7	30.6	28.2	27.0	24.8	25.1	24.8	-0.3
Have five or more drinks once or twice each weekend	59.1	58.0	57.7	54.7	54.1	51.8	55.6	+3.8sss	54.7	55.9	54.9	52.9	52.0	50.9	51.8	+0.9	48.6	49.0	48.3	46.5	45.2	49.5	43.0	-6.5sss
Smoke one or more packs of cigarettes per day	51.6	50.8	52.7	50.8	49.8	50.4	52.6	+2.2	60.3	59.3	60.7	59.0	57.0	57.9	59.9	+2.0	69.4	69.2	69.5	67.6	65.6	68.2	68.7	+0.5
Use smokeless tobacco regularly	35.1	35.1	36.9	35.5	33.5	34.0	35.2	+1.2	40.3	39.6	44.2	42.2	38.2	41.0	42.2	+1.2	37.4	35.5	38.9	36.6	33.2	37.4	38.6	+1.2
Take steroids[d]	64.2	69.5	70.2	67.6	—	—	—	—	67.1	72.7	73.4	72.5	—	—	—	—	65.6	70.7	69.1	66.1	66.4	67.6	67.2	-0.4
Approx. N =	*17437*	*18662*	*18366*	*17394*	*17501*	*17926*	*18765*		*14719*	*14808*	*15298*	*15880*	*17006*	*15670*	*15640*		*2549*	*2684*	*2759*	*2591*	*2603*	*2449*	*2579*	

NOTES: Level of significance of difference between the two most recent classes: s = .05, ss = .01, sss = .001. '—' indicates data not available.
SOURCE: The Monitoring the Future Study, the University of Michigan.

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[a] Answer alternatives were: (1) No risk, (2) Slight risk, (3) Moderate risk, (4) Great risk, (5) Can't say, drug unfamiliar.

[b] 8th and 10th grade: Data based in 1997 on two-thirds of N indicated due to changes in questionnaire forms.

[c] 8th and 10th grade: Data based on one of two forms in 1993–96; N is one-half of N indicated. Data based in 1997 on one-third of N indicated due to changes in questionnaire forms.

[d] 8th and 10th grade: Data based on two forms in 1991 and 1992. Data based on one of two forms in 1993 and 1994; N is one-half of N indicated.

seeing risk to the user increased. This increase preceded an appreciable downturn in use and continued fairly steadily through 1991, as use fell dramatically. However, in 1992 perceived risk began to drop and, while use continued to fall that year, the drop in perceived risk presaged a sharp increase in use beginning in 1993. Perceived risk has continued to drop since 1992 and use has continued to rise since 1993 (see Figure 8-4). We believe these changes in beliefs about the harmfulness of marijuana use played a critical role in causing a turnaround in use. In this case, the decrease in perceived risk preceded the change in behavior by a year. As Figures 8-1a and 8-4 illustrate, the decline in perceived risk appears to decelerate in 1996, as did the increase in use.

- In the earlier years of this study, the most impressive increase (in absolute terms) in perceived risk occurred for ***regular marijuana use***. The proportion of seniors who viewed regular marijuana use as involving a great risk doubled in just seven years, from 35% to 70% between 1978 and 1985. Subsequently, the proportion increased more slowly, reaching 79% in 1991. The dramatic change between those years occurred during a period when a substantial amount of scientific and media attention was devoted to the potential dangers of heavy marijuana use. Young people also had ample opportunity for vicarious learning about the effects of heavy use through observation, because such use was widespread among their peers. (Recall that one in nine seniors was an active daily marijuana user in 1978.) Concerns about the harmfulness of occasional and experimental use also increased, and they were even larger in proportional terms, though not in absolute terms. For example, the proportion of seniors seeing great risk in ***trying marijuana*** rose from 8% in 1978 to 27% in 1991, and for ***occasional marijuana use*** it rose from 12% to 41% over the same interval.

There are several possible explanations for the recent turnaround and decline in perceived risk of marijuana use during the 1990s. First, some of the forces that gave rise to the earlier increases in perceived risk became less influential: (1) because of lower use rates overall, fewer students had opportunities for vicarious learning by observing firsthand the effects of heavy marijuana use among their peers; (2) media coverage of the harmful effects of drug use, and of incidents resulting from drug use (particularly marijuana), decreased very substantially in the early 1990s; and (3) media coverage of the anti-drug advertising campaign of the Partnership for a Drug-Free America also declined appreciably (as has been documented by both the Partnership and our own data from seniors on their levels of recalled exposure to such ads). In addition, forces encouraging use became more visible; in particular, a number of rap groups, grunge groups, and other rock groups started to sing the praises of using marijuana (and sometimes other drugs), which may have caused youngsters to think that using drugs might not be so dangerous after all. Finally, because many of the parents of today's teenagers are themselves drug-experienced, this may inhibit some discussions of drugs with their

TABLE 8-2
Long-Term Trends in Harmfulness of Drugs as Perceived by Twelfth Graders

How much do you think people risk harming themselves (physically or in other ways), if they	Percentage saying "great risk"[a]																							
	Class of 1975	Class of 1976	Class of 1977	Class of 1978	Class of 1979	Class of 1980	Class of 1981	Class of 1982	Class of 1983	Class of 1964	Class of 1985	Class of 1986	Class of 1987	Class of 1988	Class of 1989	Class of 1990	Class of 1991	Class of 1992	Class of 1993	Class of 1994	Class of 1995	Class of 1996	Class of 1997	'96–'97 change
Try marijuana once or twice	15.1	11.4	9.5	8.1	9.4	10.0	13.0	11.5	12.7	14.7	14.8	15.1	18.4	19.0	23.6	23.1	27.1	24.5	21.9	19.5	16.3	15.6	14.9	-0.7
Smoke marijuana occasionally	18.1	15.0	13.4	12.4	13.5	14.7	19.1	18.3	20.6	22.6	24.5	25.0	30.4	31.7	36.5	36.9	40.6	39.6	35.6	30.1	25.6	25.9	24.7	-1.2
Smoke marijuana regularly	43.3	38.6	36.4	34.9	42.0	50.4	57.6	60.4	62.8	66.9	70.4	71.3	73.5	77.0	77.5	77.8	78.6	76.5	72.5	65.0	60.8	59.9	58.1	-1.8
Try LSD once or twice	49.4	45.7	43.2	42.7	41.6	43.9	45.5	44.9	44.7	45.4	43.5	42.0	44.9	45.7	46.0	44.7	46.6	42.3	39.5	38.8	36.4	36.2	34.7	-1.5
Take LSD regularly	81.4	80.8	79.1	81.1	82.4	83.0	83.5	83.5	83.2	83.8	82.9	82.6	83.8	84.2	84.3	84.5	84.3	81.8	79.4	79.1	78.1	77.8	76.6	-1.2
Try PCP once or twice	—	—	—	—	—	—	—	—	—	—	—	—	55.6	58.8	56.6	55.2	51.7	54.8	50.8	51.5	49.1	51.0	48.8	-2.2
Try MDMA once or twice	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	33.8	—
Try cocaine once or twice	42.6	39.1	35.6	33.2	31.5	31.3	32.1	32.8	33.0	35.7	34.0	33.5	47.9	51.2	54.9	59.4	59.4	56.8	57.6	57.2	53.7	54.2	53.6	-0.6
Take cocaine occasionally	—	—	—	—	—	—	—	—	—	—	—	54.2	66.8	69.2	71.8	73.9	75.5	75.1	73.3	73.7	70.8	72.1	72.4	+0.3
Take cocaine regularly	73.1	72.3	68.2	68.2	69.5	69.2	71.2	73.0	74.3	78.8	79.0	82.2	88.5	89.2	90.2	91.1	90.4	90.2	90.1	89.3	87.9	88.3	87.1	-1.2
Try crack once or twice	—	—	—	—	—	—	—	—	—	—	—	—	57.0	62.1	62.9	64.3	60.6	62.4	57.6	58.4	54.6	56.0	54.0	-2.0
Take crack occasionally	—	—	—	—	—	—	—	—	—	—	—	—	70.4	73.2	75.3	80.4	76.5	76.3	73.9	73.8	72.8	71.4	70.3	-1.1
Take crack regularly	—	—	—	—	—	—	—	—	—	—	—	—	84.6	84.8	85.6	91.6	90.1	89.3	87.5	89.6	88.6	88.0	86.2	-1.8
Try cocaine powder once or twice	—	—	—	—	—	—	—	—	—	—	—	—	45.3	51.7	53.8	53.9	53.6	57.1	53.2	55.4	52.0	53.2	51.4	-1.8
Take cocaine powder occasionally	—	—	—	—	—	—	—	—	—	—	—	—	56.8	61.9	65.8	71.1	69.8	70.8	68.6	70.6	69.1	68.8	67.7	-1.1
Take cocaine powder regularly	—	—	—	—	—	—	—	—	—	—	—	—	81.4	82.9	83.9	90.2	88.9	88.4	87.0	88.6	87.8	86.8	86.0	-0.8
Try heroin once or twice	60.1	58.9	55.8	52.9	50.4	52.1	52.9	51.1	50.8	49.8	47.3	45.8	53.6	54.0	53.8	55.4	55.2	50.9	50.7	52.8	50.9	52.5	56.7	+4.2s
Take heroin occasionally	75.6	75.6	71.9	71.4	70.9	70.9	72.2	69.8	71.8	70.7	69.8	68.2	74.6	73.8	75.5	76.6	74.9	74.2	72.0	72.1	71.0	74.8	76.3	+1.5
Take heroin regularly	87.2	88.6	86.1	86.6	87.5	86.2	87.5	86.0	86.1	87.2	86.0	87.1	88.7	88.8	89.5	90.2	89.6	89.2	88.3	88.0	87.2	89.5	88.9	-0.6
Try amphetamines once or twice	35.4	33.4	30.8	29.9	29.7	29.7	26.4	25.3	24.7	25.4	25.2	25.1	29.1	29.6	32.8	32.2	36.3	32.6	31.3	31.4	28.8	30.8	31.0	+0.2
Take amphetamines regularly	69.0	67.3	66.6	67.1	69.9	69.1	66.1	64.7	64.8	67.1	67.2	67.3	69.4	69.8	71.2	71.2	74.1	72.4	69.9	67.0	65.9	66.8	66.0	-0.8
Try crystal meth. (ice) once or twice	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	61.6	61.9	57.5	58.3	54.4	55.3	54.4	-0.9
Try barbiturates once or twice	34.8	32.5	31.2	31.3	30.7	30.9	28.4	27.5	27.0	27.4	26.1	25.4	30.9	29.7	32.2	32.4	35.1	32.2	29.2	29.9	26.3	29.1	26.9	-2.2
Take barbiturates regularly	69.1	67.7	68.6	68.4	71.6	72.2	69.9	67.6	67.7	68.5	68.3	67.2	69.4	69.6	70.5	70.2	70.5	70.2	66.1	63.3	61.6	60.4	56.8	-3.6s
Try one or two drinks of an alcoholic beverage (beer, wine, liquor)	5.3	4.8	4.1	3.4	4.1	3.8	4.6	3.5	4.2	4.6	5.0	4.6	6.2	6.0	6.0	8.3	9.1	8.6	8.2	7.6	5.9	7.3	6.7	-0.6
Take one or two drinks nearly every day	21.5	21.2	18.5	19.6	22.6	20.3	21.6	21.6	21.6	23.0	24.4	25.1	26.2	27.3	28.5	31.3	32.7	30.6	28.2	27.0	24.8	25.1	24.8	-0.3
Take four or five drinks nearly every day	63.5	61.0	62.9	63.1	66.2	65.7	64.5	65.5	66.8	68.4	69.8	66.5	69.7	68.5	69.8	70.9	69.5	70.5	67.8	66.2	62.8	65.6	63.0	-2.6
Have five or more drinks once or twice each weekend	37.8	37.0	34.7	34.5	34.9	35.9	36.3	36.0	38.6	41.7	43.0	39.1	41.9	42.6	44.0	47.1	48.6	49.0	48.3	46.5	45.2	49.5	43.0	-6.5sss
Smoke one or more packs of cigarettes per day	51.3	56.4	58.4	59.0	63.0	63.7	63.3	60.5	61.2	63.8	66.5	66.0	68.6	68.0	67.2	68.2	69.4	69.2	69.5	67.6	65.6	68.2	68.7	+0.5
Use smokeless tobacco regularly	—	—	—	—	—	—	—	—	—	—	—	25.8	30.0	33.2	32.9	34.2	37.4	35.5	38.9	36.6	33.2	37.4	38.6	+1.2
Take steroids	—	—	—	—	—	—	—	—	—	—	—	—	—	—	63.8	69.9	65.6	70.7	69.1	66.1	66.4	67.6	67.2	-0.4
Approx. N =	*2804*	*2918*	*3052*	*3770*	*3250*	*3234*	*3604*	*3557*	*3305*	*3262*	*3250*	*3020*	*3315*	*3276*	*2796*	*2553*	*2549*	*2684*	*2759*	*2591*	*2603*	*2449*	*2579*	

NOTES: Level of significance of difference between the two most recent classes: s = .05, ss = .01, sss = .001. '—' indicates data not available.
SOURCE: The Monitoring the Future Study, the University of Michigan.

[a] Answer alternatives were: (1) No risk, (2) Slight risk, (3) Moderate risk, (4) Great risk, and (5) Can't say, drug unfamiliar.

children, and may cause them to feel uncomfortable about how to handle the apparent hypocrisy of telling their children not to do what they themselves did as teens. We believe that all of these factors may have contributed to the recent resurgence in marijuana use.

Finally, it should be noted that by the mid-1990s a number of these influences began to reverse direction: (1) the prevalence of use has increased among students, providing more opportunities for vicarious learning; (2) media coverage of the drug issue has increased considerably as the resurgence of the drug problem among teens has been recognized as newsworthy; and (3) the recording industry appears to be producing fewer pro-drug lyrics and messages, perhaps in large part because of growing concern with overdose deaths among their artists. (A similar dynamic seems to have occurred in the fashion industry with the recent demise of "heroin chic.") The extent of anti-drug ads has not yet increased, but it is about to do so under a new federal, paid-advertising initiative. Finally, parents have been exhorted repeatedly in the last couple of years to discuss drugs with their children, and we would guess that more of them have, though we have not yet seen empirical documentation of such a trend.

- Trends in the perceived risk of regular marijuana use and in 30-day prevalence of use are combined in Figure 8-4 in order to illustrate more clearly their degree of covariance over time, which we interpret as reflecting a causal connection.[40] The trend line for the perceived availability of marijuana is included in Figure 8-4 to show its lack of covariance with use and, thus, its inability to explain the substantial fluctuations in usage levels over the past 23 years.

  We have hypothesized that perceived risk operates not only directly on the individual's use but also indirectly through its impact on personal disapproval. In turn, personal disapproval operates directly on use and, in the collective, indirectly by influencing peer norms. Presumably there is some lag in these indirect effects; while perceived risk began to fall in 1992, personal disapproval did not begin to decline for experimental marijuana use until 1993, when it dropped sharply and use rose sharply. These shifts have continued through 1997.

- A similar cross-time profile of attitudes has emerged for ***cocaine*** (Figure 8-5). First, the percentage who perceived great risk in ***trying cocaine*** once or twice dropped steadily from 43% to 31% between 1975 and 1980, a period of rapidly increasing use. However, rather than reversing sharply, as did perceived risk for marijuana use, perceived risk for experimental cocaine use moved rather little from 1980 to 1986, corresponding to a fairly stable period in actual use. Then, from 1986 to 1987, perceived risk for experimenting with cocaine jumped sharply from 34% to 48% in a single year, and in that year the first significant decline in use took place (see Figure 8-5). From 1987 to 1990, perceived risk continued to rise as use fell. Perceived risk peaked around 1990 or 1991, and then decreased slightly until 1995, when a significant decline in perceived risk of trying cocaine occurred. There has been little further change since then. Trends in attitudes toward ***crack*** and ***cocaine powder*** use have been similar to those toward cocaine use. Crack use has shown the greatest recent decline in perceived risk, with the proportion of seniors reporting great risk associated with experimental use falling from 64% in 1990 to 54% by 1997.

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[40] We have addressed an alternate hypothesis that a general shift toward a more conservative lifestyle might have accounted for the shifts in both attitudes and behaviors. The empirical evidence tended to contradict that hypothesis. See Bachman, J.G., Johnston, L.D., O'Malley, P.M., & Humphrey, R.H. (1988). Explaining the recent decline in marijuana use: Differentiating the effects of perceived risks, disapproval, and general lifestyle factors, *Journal of Health and Social Behavior, 29*: 92-112. Johnston also showed that an increasing proportion of the quitters and abstainers from marijuana use reported concern over the physical and psychological consequences of use as reasons for their non-use. See Johnston, L.D. (1982). A review and analysis of recent changes in marijuana use by American young people, in *Marijuana: The national impact on education* (pp. 8-13). New York: American Council on Marijuana.

We believe these changes in beliefs had an important impact on behavior. As Figure 8-2a illustrates, perceived risk for ***regular cocaine use*** began to rise in the 1980s, increasing gradually from 69% in 1980 to 82% in 1986; however, that change did not translate into a change in actual behavior, and we believe the explanation is that very few high school seniors were regular users or ever expected to be. Thus, as we had predicted earlier, it was not until seniors' attitudes about behaviors that they saw as relevant to themselves began to change (i.e., attitudes about experimental and occasional cocaine use) that the behaviors also began to shift.[41,42] Figure 8-5 shows trends in perceived risk, perceived availability, and actual use simultaneously—again, to illustrate that shifts in perceived risk could explain the downturn in use while shifts in availability could not.

We attribute changes in actual cocaine use between 1986 and 1991 to changes in risk associated with experimental and occasional use. We believe the changes in these attitudes resulted from three factors: (1) the greatly increased media coverage of cocaine and its dangers that occurred in that interval (particularly in 1986); (2) an increasing number of anti-drug, and specifically anti-cocaine, "spots;" and (3) the widely publicized deaths in 1986 of sports stars Len Bias and Don Rogers, attributed to their cocaine use. The death of the sports stars, we believe, helped to bring home the notions, first, that no one—regardless of age or physical condition—is invulnerable to being killed by cocaine and, second, that one does not have to be an addict or regular user to suffer such

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[41] See also Bachman, J.G., Johnston, L.D., & O'Malley, P.M. (1990). Explaining the recent decline in cocaine use among young adults: Further evidence that perceived risks and disapproval lead to reduced drug use. *Journal of Health and Social Behavior, 31*: 173-184. For a discussion of perceived risk in the larger set of factors influencing trends, and for a consideration of the forces likely to influence perceived risk, see also, Johnston, L.D. (1991). Toward a theory of drug epidemics. In R.L. Donohew, H. Sypher, & W. Bukoski (Eds.) *Persuasive communication and drug abuse prevention* (pp. 93-132). Hillsdale, NJ: Lawrence Erlbaum.

[42] Our belief in the importance of perceived risk of experimental and occasional use of cocaine led us to include in 1986 for the first time the question about the dangers of occasional cocaine use.

adverse consequences. Finally, the addictive potential of cocaine also was emphasized heavily in the media during that period, in large part due to a media frenzy over crack use.

As with marijuana, 1991 saw an end to the increase in the perceived risk of cocaine. Perceived risk began to fall after 1991, and after 1992 actual use began to rise (Figure 8-5). The significant reversal of trends in beliefs set the stage for a resurgence in use, particularly when combined with the fact that the proportions of students using two of the "gateway drugs"—cigarettes and marijuana—also had been rising. Since 1992, the proportion of twelfth graders using cocaine in the prior 12 months has risen steadily from 3.1% to 5.5% in 1997. Both crack and cocaine powder have also been showing a rise in use. As we shall see below, similar reversals occurred in the eighth and tenth grades, as well, except that they started a year earlier among the eighth graders and resulted in larger changes in eighth and tenth grades than in twelfth grade. But as Figure 8-3a (bottom panel) illustrates, the perceived risk of trying crack leveled in all three grades after 1995, and the perceived risk of trying powder cocaine showed a similar pattern (see Table 8-1).

- For most of the illicit drugs other than marijuana and cocaine, the period from 1975 to 1979 revealed a modest but consistent trend in the direction of fewer seniors associating much risk with experimental or occasional use of them (see Table 8-2 and Figures 8-6a, 8-7a, 8-8a). This trend continued for ***amphetamines*** and ***barbiturates***, but not for other drugs, until about 1982.

  Over the next several years there was little change, although perceived risk of harm from experimental or occasional use of all the illicit drugs other than marijuana dropped slightly in 1985 and 1986. However, the perceived risk of experimental or occasional use of all drugs increased in 1987, reached a peak in 1990 or 1991, and then began to decline noticeably.

- For ***heroin***, there was a decline in perceived risk among seniors from 1990 through 1995. (These questions were not included in the eighth- and tenth-grade questionnaires until 1995.) As perceived risk fell, use by seniors rose, with annual prevalence increasing from 0.4% in 1991 to 1.1% by 1995. (Use was also rising in the lower grades.) In 1996 and 1997, however, perceived risk began to increase in all three grades (Table 8-1 and Figure 8-8a) and usage rates pretty much stabilized (Table 5-2). Perhaps not entirely coincidentally, the Partnership for a Drug-Free America launched a media campaign aimed at deglamorizing heroin in 1996. While the target audience was young adults, many secondary school students undoubtedly saw the ads as well.

- In sum, between 1975 and 1979 there was a distinct decline among seniors in perceived harmfulness associated with use of all the illicit drugs. After 1979, concerns about regular ***marijuana*** use increased dramatically, and concerns about the use of marijuana at less frequent levels increased considerably. After 1986, there was a sharp increase in the risks associated with ***cocaine*** use—particularly at the experimental and occasional use levels—and some increase in perceived risk of use of virtually all the ***other illicit drugs*** (Figures 8-6a, 8-7a, and 8-8a). Between 1991 and 1995, the trends reversed, with fewer seniors seeing use of these drugs as being dangerous. By 1996 and 1997, among seniors the decline in perceived risk of ***marijuana*** use had sharply decelerated (Figure 8-1a); the decline in perceived risk of ***cocaine*** use had leveled (Figure 8-2a); the decline in the perceived risk of ***LSD*** use had decelerated (Figure 8-7a); and the perceived risk of using ***heroin*** was actually rising (Figure 8-8a). Only for ***barbiturate*** use (asked only of seniors, see Figure 8-6a) was there any appreciable further decline in perceived risk.

- The sharp decline in seniors' perceived risk of ***LSD*** use between 1992 and 1995 has been particularly noteworthy, confirming our concern that attitudes of the newer generation of young people may not have been influenced by some of the direct and vicarious learning experiences that helped to make their predecessors more cautious about its use (Figure 8-7a). In the late 1960s and early 1970s, young people became aware of the risks of bad trips, uncontrollable flashbacks, dangerous behaviors under the influence, etc. Today's youngsters know much less about those risks. Fortunately, this decline appears to have halted since 1995 among eighth and tenth graders, but not yet among seniors. (See Figure 8-7a and Table 8-1.)

- The risks associated with experimental use of ***crystal methamphetamine*** (ice) fell from 62% in 1992 to 54% in 1995 and then stabilized (Table 8-2). Seniors' self-reported annual use of ice rose from 1.3% in 1992 to 2.8% in 1996, before stabilizing.

- The perceived risk of trying ***PCP***, though very high relative to other drugs in 1988, fell by 10 percentage points from its peak level of 59% in 1988 to 49% in 1995. Again, we suspect that youngsters in more recent classes are simply much less familiar with the drug and its considerable dangers, compared to those who grew up in an earlier period. (Annual prevalence of use rose among seniors, from 1.4% in 1993 to 2.6% in 1996, before stabilizing.)

- After showing little systematic change in the latter half of the 1970s, the perceived risks associated with ***alcohol use*** at various levels rose during the 1980s (though not as dramatically as the perceived risks associated with marijuana and cocaine use) (see Figure 8-9a). The proportion perceiving great risk of harm in having one or two drinks nearly every day rose from 20% in 1980 to 33% in 1991, but it fell to 25% by 1997, perhaps in part due to the publicity about the value of moderate alcohol consumption in protecting against heart disease. The proportion perceiving great risk in having four or five drinks nearly every day rose slightly from 66% in 1980 to 71% in 1990, remained fairly stable through 1992, and then declined to 63% by 1997.

The corresponding figures on perceived risk of ***occasional binge drinking*** (having five or more drinks once or twice a weekend) rose quite substantially, from 36% in 1980 to 49% in 1992, and then it, too, decreased—to 43% by 1997. (Recall that the reported prevalence of occasional binge drinking declined from 41% in 1981 to 28% in 1993 and then rose slightly to 31% by 1997.) The increases in perceived risk tended to be followed by some declines in the actual behaviors, while the decreases in perceived risk tended to be followed by some increases in those behaviors—once again suggesting the importance of these beliefs in influencing behavior. The increase in perceived risk during the 1980s may have been due in large part to the many efforts aimed at discouraging drunk driving.

- Despite all that is known today about the health consequences of ***cigarette smoking***, about one-third (31%) of twelfth grade students still do not believe that there is a great risk in smoking a pack or more of cigarettes per day (see Figure 8-10a).

  Over a longer period, the number of seniors who thought ***smoking a pack or more a day*** involved great risk to the user increased, from 51% in 1975 to 64% in 1980. This shift corresponded with, and to some degree preceded, the downturn in regular smoking found in this age group (compare Figures 5-4h and 8-10a). Between 1980 and 1984, this statistic showed no further increase, once again presaging the end of the decline in use. In the 13-year interval since 1984, the percentage of seniors perceiving great risk in regular smoking has risen only about 5 percentage points.

- With regard to the regular use of ***smokeless tobacco***, very few seniors report much risk (Figure 8-11a), although there was some increase from 26% in 1986 (when the belief was first measured) to 39% in 1993. From 1993 to 1995 such concerns decreased a bit, declining to 33% in 1995, but then rose back to 39% by 1997.

Trends in Perceived Harmfulness Among Eighth and Tenth Graders

- Data on perceived risk for eighth and tenth graders are not available for many of the drugs for which twelfth-grade data are provided because the younger students were given a more limited set of questions. However, for several years eighth graders have shown troublesome declines in perceived risk for ***marijuana*** use (see Table 8-1 and Figures 8-1a, 8-3a). Indeed, the decreases in the perceived risk of marijuana use, which have been occurring at least since 1991 for eighth graders and since 1992 for tenth graders, became very sharp. For eighth graders, perceived risk of trying marijuana dropped from 40% in 1991 to 25% in 1997. For tenth graders, this measure dropped from 32% in 1992 to 19% in 1997. As is clear from Figure 8-1a, however, these declines in perceived risk for marijuana use have been decelerating.

- Likewise, for ***crack*** and ***cocaine powder*** use there had been a large drop in perceived risk after 1991 in the case of eighth graders and after 1992 among tenth graders (Table 8-1). Use of both drugs had been rising over the same intervals that perceived risk had been falling. However, in 1996 and 1997 the declines in perceived risk decelerated (see Figure 8-3a) and the use of crack stabilized in both grades in 1997, while the use of powder cocaine stabilized in eighth grade only.

- Perceived risk of ***LSD*** use also had been declining in both grades since it was first measured in 1993, but the decline pretty much halted by 1996 (Table 8-1). Use, which had been increasing fairly steadily, leveled in 1997.

- Questions about the dangers of ***inhalant*** use have been asked only of eighth and tenth graders over the years. Perceived risk was relatively stable between 1991 and 1995, before showing a jump in 1996 and then holding steady in 1997 (Table 8-1). Self-reported use of inhalants increased gradually from 1991 through 1995, before declining slightly in both grades by 1997. Partly in response to the findings of growing inhalant use among teenagers from this study, in 1995 the Partnership for a Drug-Free America launched a media campaign to increase adolescent awareness about the dangers associated with inhalant use. The data here are consistent with the notion that their efforts have been successful.

- Because we see perceived risk as a central cause of the decline in various forms of illicit drug use, the softening in these beliefs in the early 1990s was troublesome, and it likely helps to explain the reversal of the downward trends in illicit drug use observed in the 1980s. It is a promising sign that the erosion in these beliefs seems to be ending.

- For ***steroids***, in 1992, a noteworthy and constructive change occurred across all three grade levels. There were increases of between 5 and 6 percentage points across the three grade levels in respondents saying there is a "great risk" to the user in taking steroids. Between 70% and 73% of each grade level reported such risk. This suggested that the widely publicized experience of professional football player Lyle Alzado had an important effect on young people's beliefs about the harmfulness of this drug. The effect this "unfortunate role model" had was very similar to that of Len Bias on beliefs about the dangers of cocaine use, except that in Lyle Alzado's case he became aware of the health consequences of his drug use well before his death and *intentionally* set about making his experience an object lesson for young people.[43] Unfortunately, this constructive development has not continued, and perceived risk slipped a bit between 1992 and 1997 (from 71% to 67%) among twelfth graders. (The question is no longer asked of eighth and tenth graders.)

- Even fewer of the eighth and tenth graders recognize the risk associated with regular ***cigarette smoking*** than do seniors (Figure 8-10a). From 1993 to 1995 perceived risk of smoking decreased a little at all grade levels, as smoking rates rose in all grades. Since 1995, perceived risk has risen some in all three grade levels; in 1997 smoking rates showed some (nonsignificant) declines for the first time in grades 8 and 10.

- The dangers associated with having five or more drinks of ***alcohol*** once or twice each weekend had been slipping, since 1991 in the case of eighth graders (down from 59% in 1991 to 52% in 1996) and since 1992 in the case of tenth graders (down from 56% in 1992 to 51% in 1996). (Recall that self-reported ***binge drinking*** had been rising gradually during the same time intervals.) In 1997, however, perceived risk of binge drinking increased significantly for eighth graders and leveled for tenth graders, as their actual binge drinking declined (nonsignificantly) for eighth graders and leveled among tenth graders.

- The risks perceived to be associated with the regular use of ***smokeless tobacco*** have shown little net change over the interval of 1991 to 1997, although all three grades showed some decline in perceived risk from 1993 to 1995 and some increase from 1995 to 1997 (Figure 8-11a).

PERSONAL DISAPPROVAL OF DRUG USE

At the beginning of the Monitoring the Future study we also included a set of questions to measure the moral sentiment respondents attach to various types of drug use. The phrasing, "Do you disapprove of people (who are 18 or older) doing each of the following?" was adopted. The answer alternatives are “don’t disapprove,” “disapprove,” and “strongly disapprove.”

Extent of Disapproval Among Twelfth Graders

- The vast majority of twelfth graders do not condone regular use of any of the illicit drugs (see Table 8-3). Even ***regular marijuana use*** is disapproved of (or strongly disapproved of) by 79%, and regular use of each of the other illicit drugs received disapproval from between 92% and 96% of today's high school seniors.

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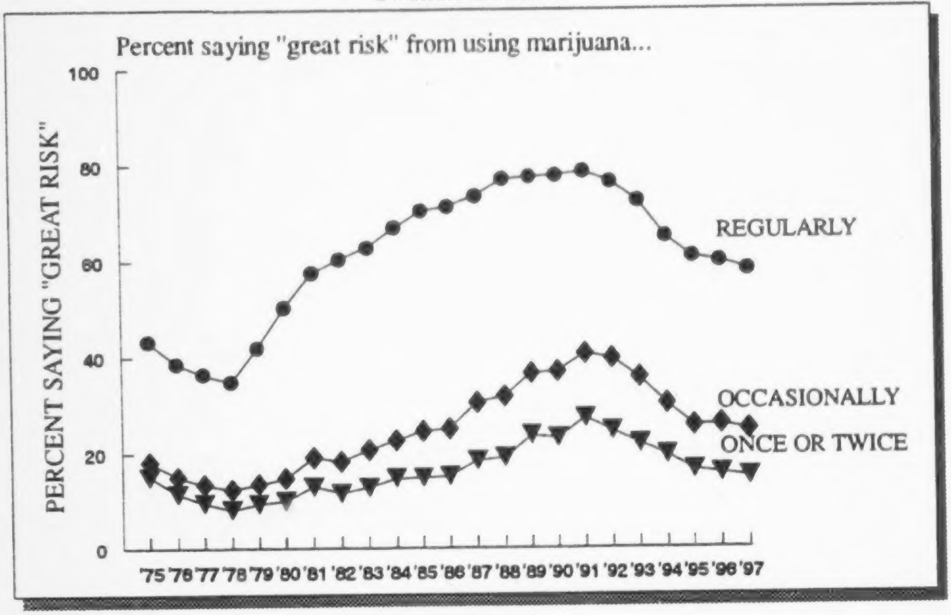
[43] For a discussion of the importance of vicarious learning from unfortunate role models see Johnston, L.D. (1991). Toward a theory of drug epidemics. In R.L. Donohew, H. Sypher, & W. Bukoski (Eds.), *Persuasive communication and drug abuse prevention* (pp. 133-156). Hillsdale, NJ: Lawrence Erlbaum.

FIGURE 8-1a

Trends in Perceived Harmfulness of Marijuana Use for Eighth, Tenth and Twelfth Graders

Twelfth Graders



Eighth, Tenth and Twelfth Graders

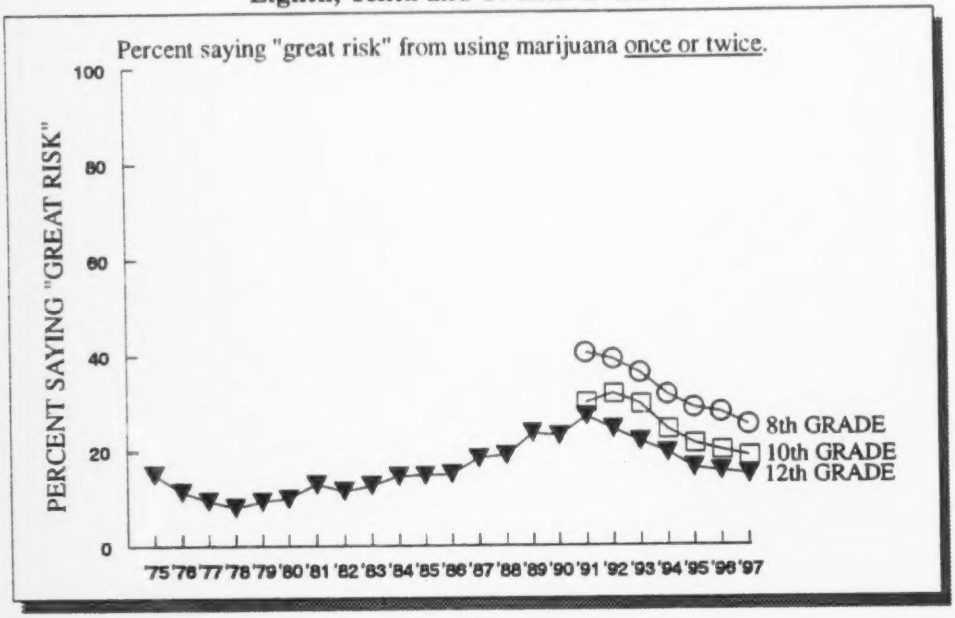
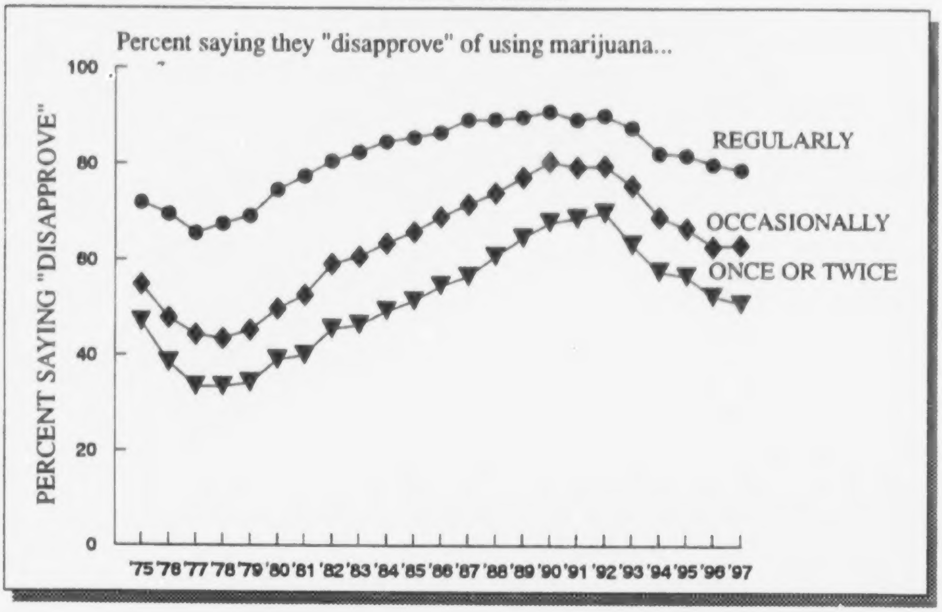


FIGURE 8-1b

Trends in Disapproval of Marijuana Use for Eighth, Tenth and Twelfth Graders

Twelfth Graders



Eighth, Tenth and Twelfth Graders

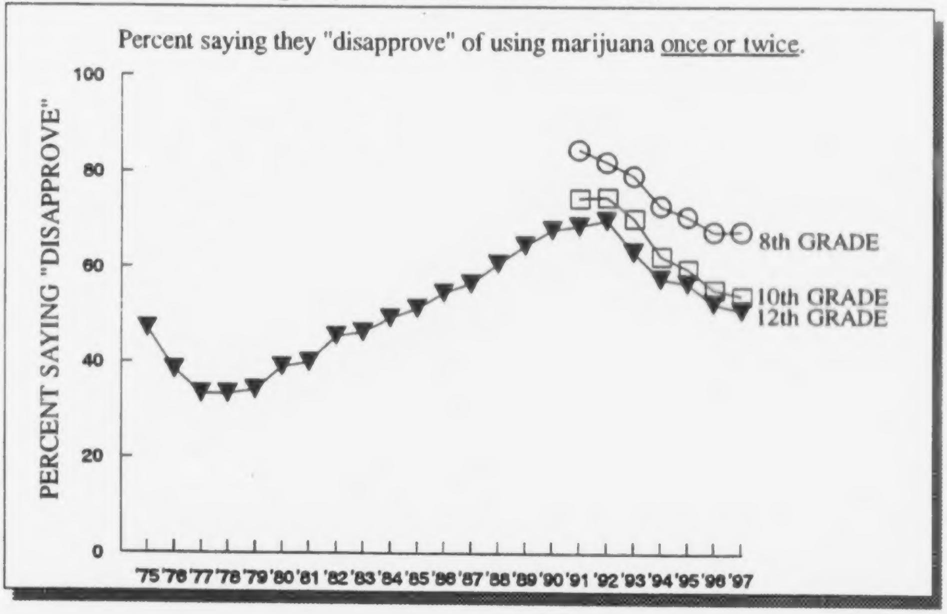
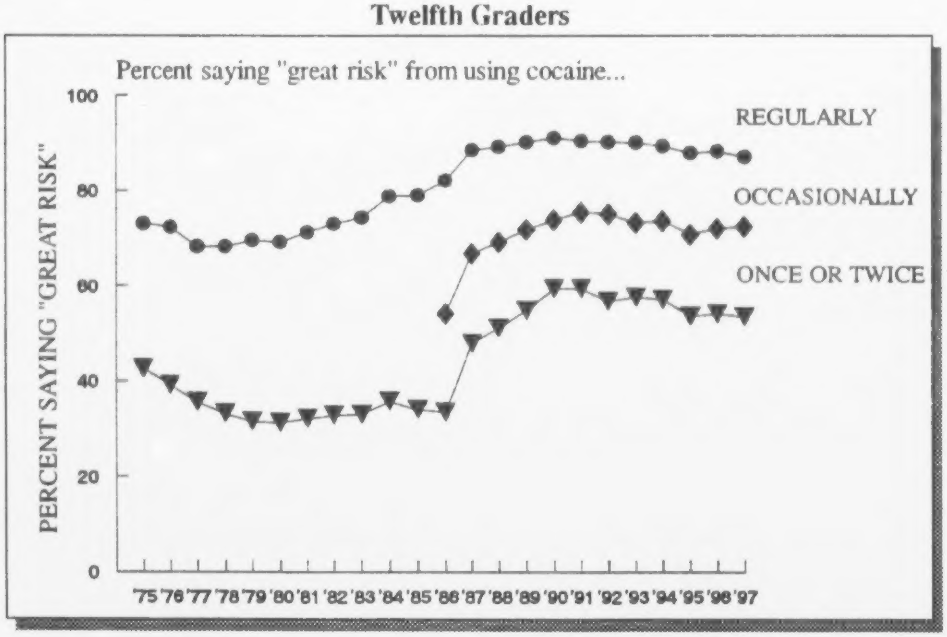


FIGURE 8-2a

Trends in Perceived Harmfulness of Cocaine Use for Twelfth Graders



NOTE: Data not available for Eighth and Tenth graders.

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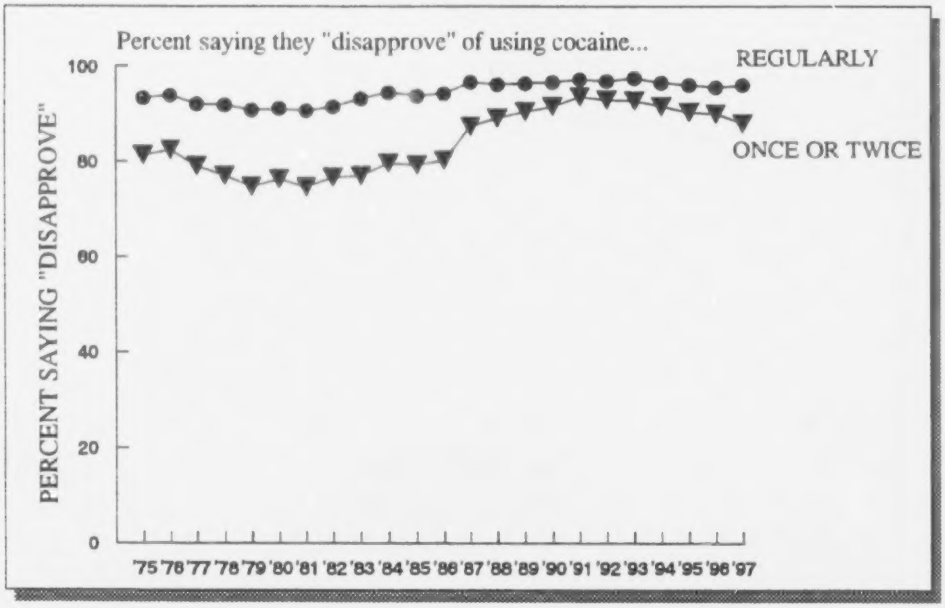
FIGURE 8-2b

Trends in Disapproval of Cocaine Use for Twelfth Graders

Twelfth Graders

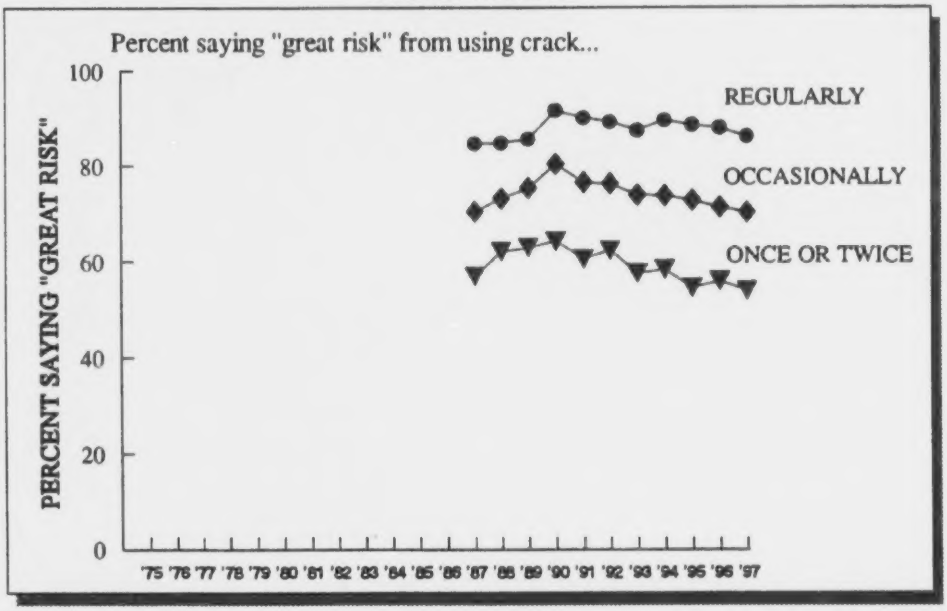


NOTE: Data not available for Eighth and Tenth graders.

FIGURE 8-3a

Trends in Perceived Harmfulness of Crack Use for Eighth, Tenth and Twelfth Graders

Twelfth Graders



Eighth, Tenth and Twelfth Graders

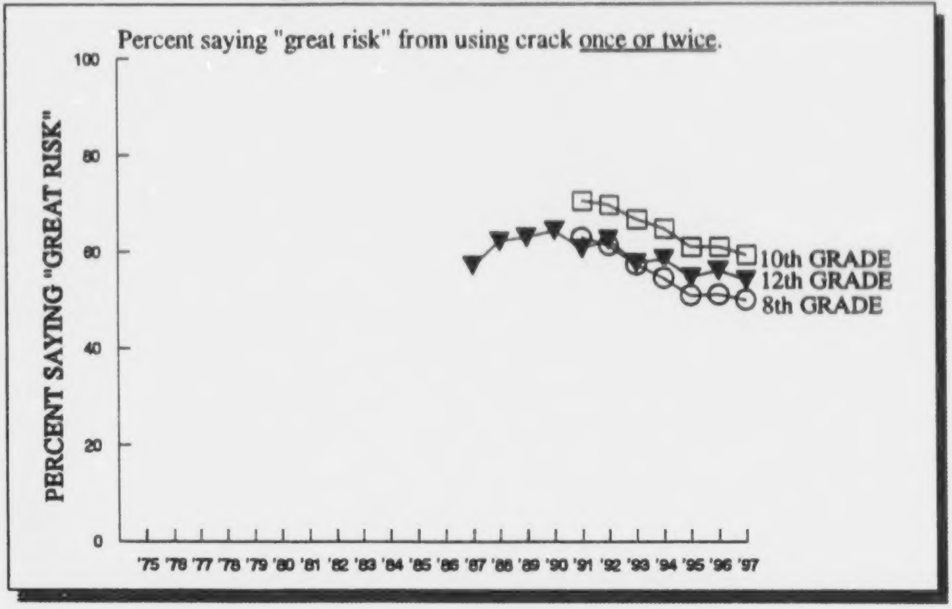
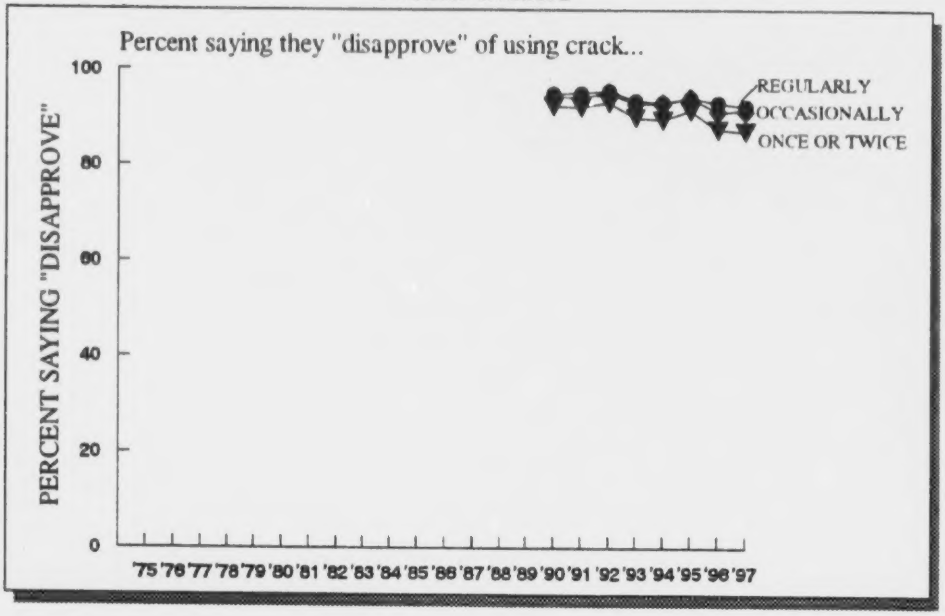


FIGURE 8-3b

Trends in Disapproval of Crack Use for Eighth, Tenth and Twelfth Graders

Twelfth Graders



Eighth, Tenth and Twelfth Graders

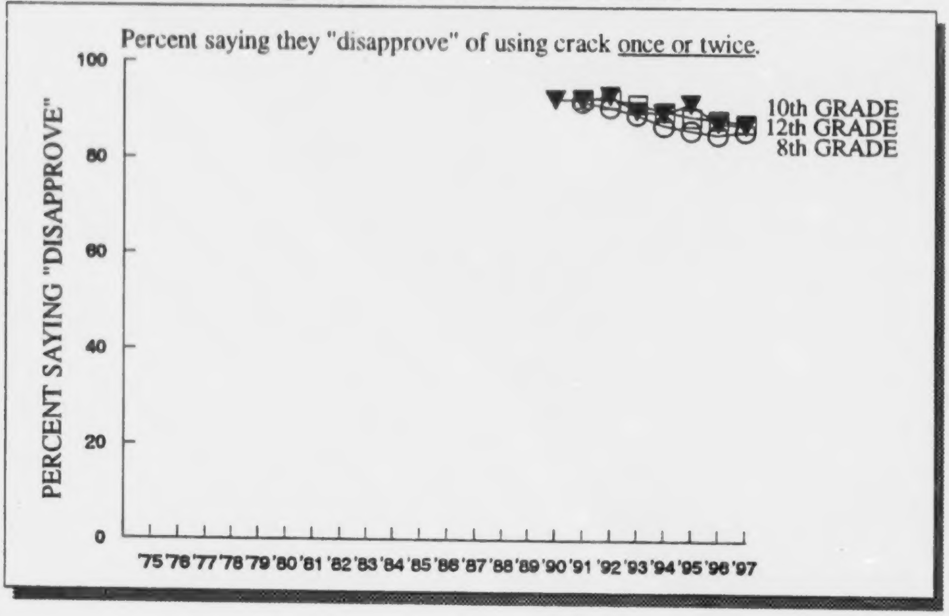


FIGURE 8-4

Marijuana: Trends in Perceived Availability, Perceived Risk of Regular Use, and Prevalence of Use in Past Thirty Days for Twelfth Graders

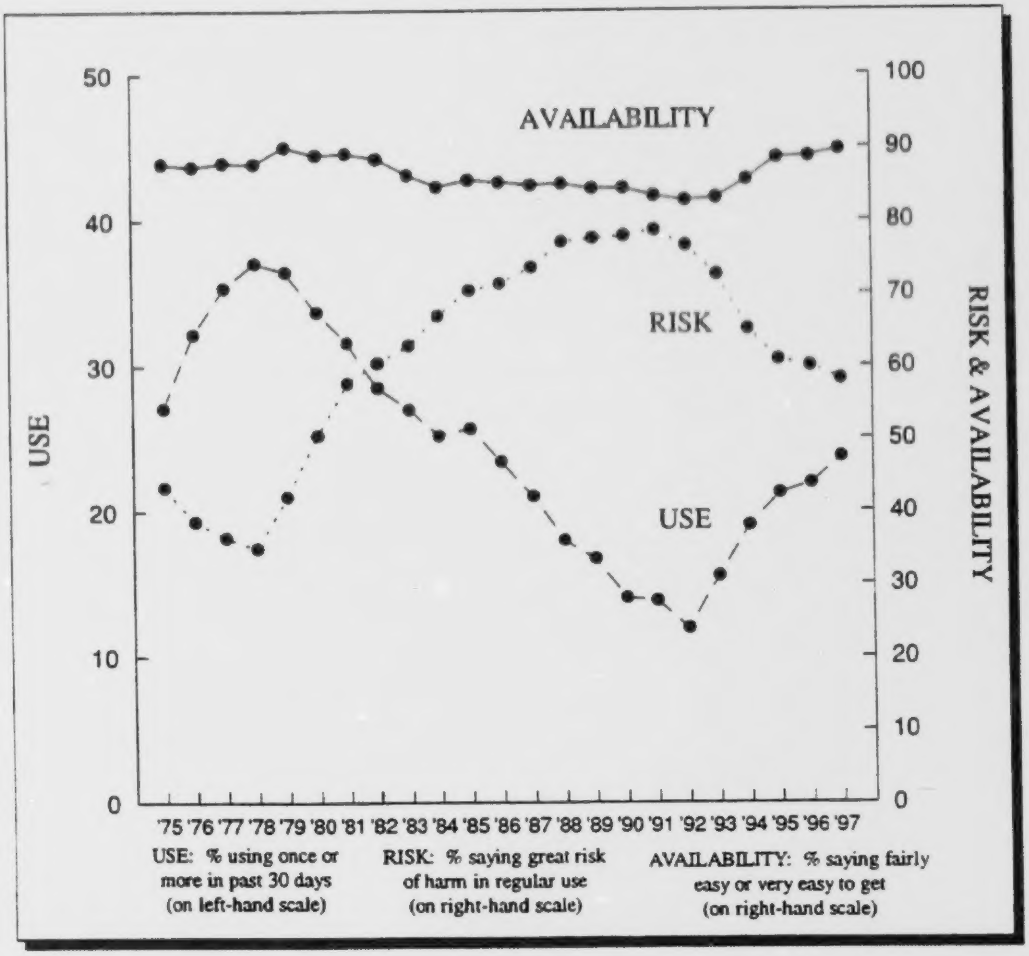


FIGURE 8-5

Cocaine: Trends in Perceived Availability, Perceived Risk of Trying, and Prevalence of Use in Past Year for Twelfth Graders

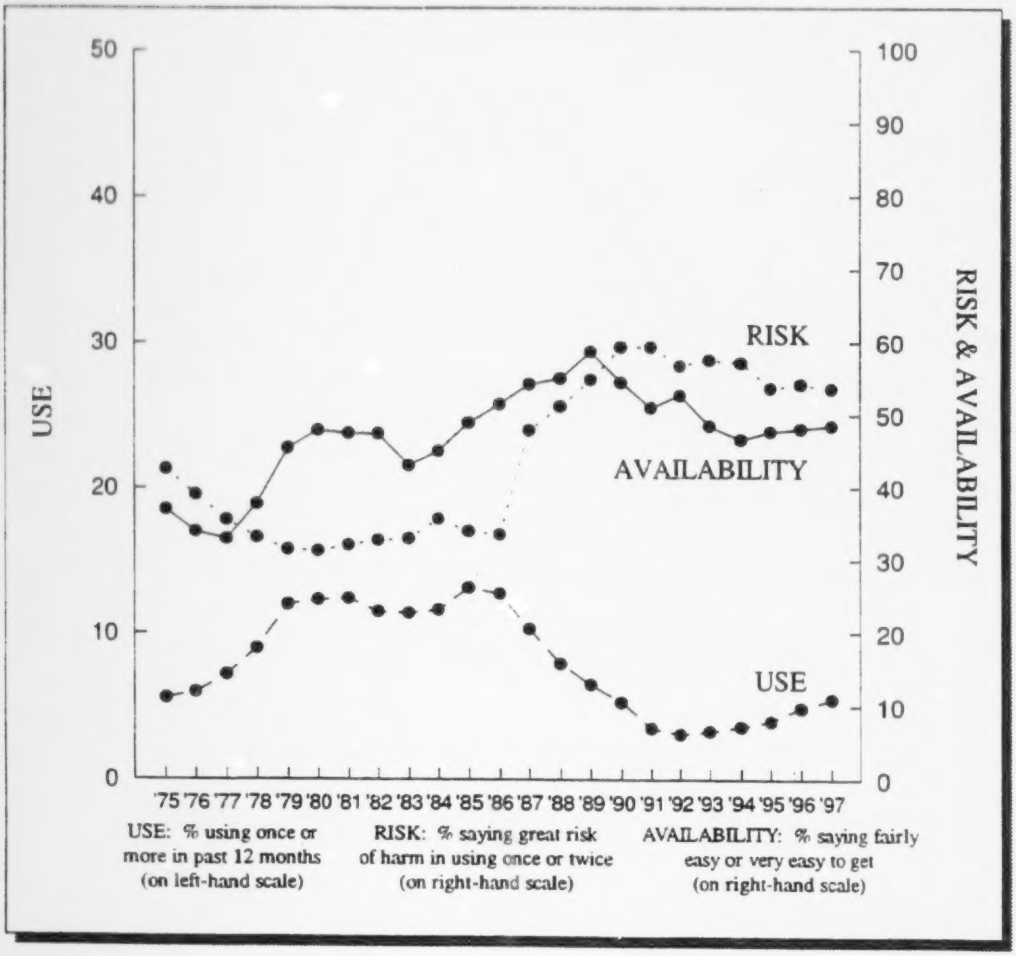
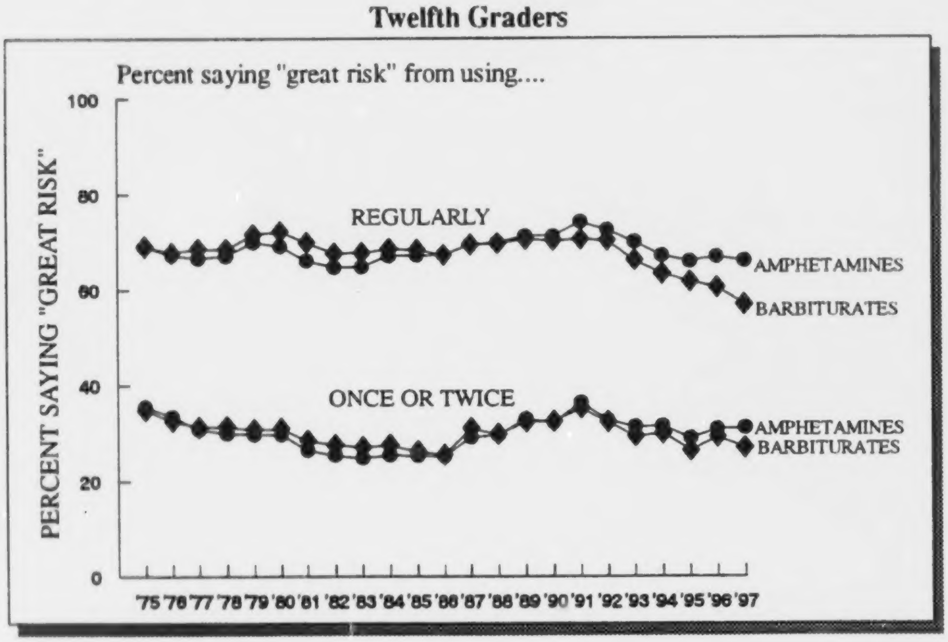


FIGURE 8-6a

Trends in Perceived Harmfulness of Amphetamine and Barbiturate Use for Twelfth Graders

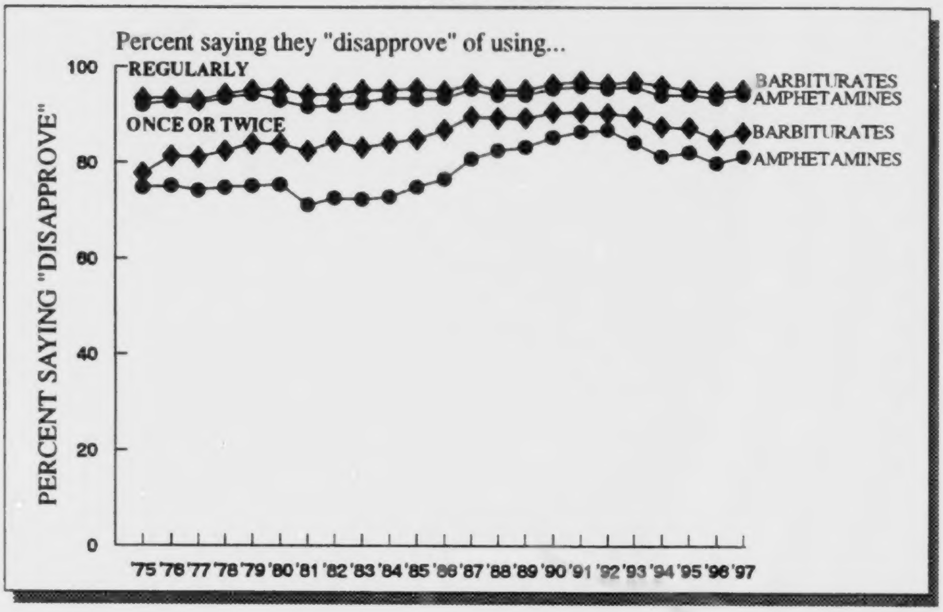


NOTE: Data not available for Eighth and Tenth graders.

FIGURE 8-6b

Trends in Disapproval of Amphetamine and Barbiturate Use for Twelfth Graders

Twelfth Graders

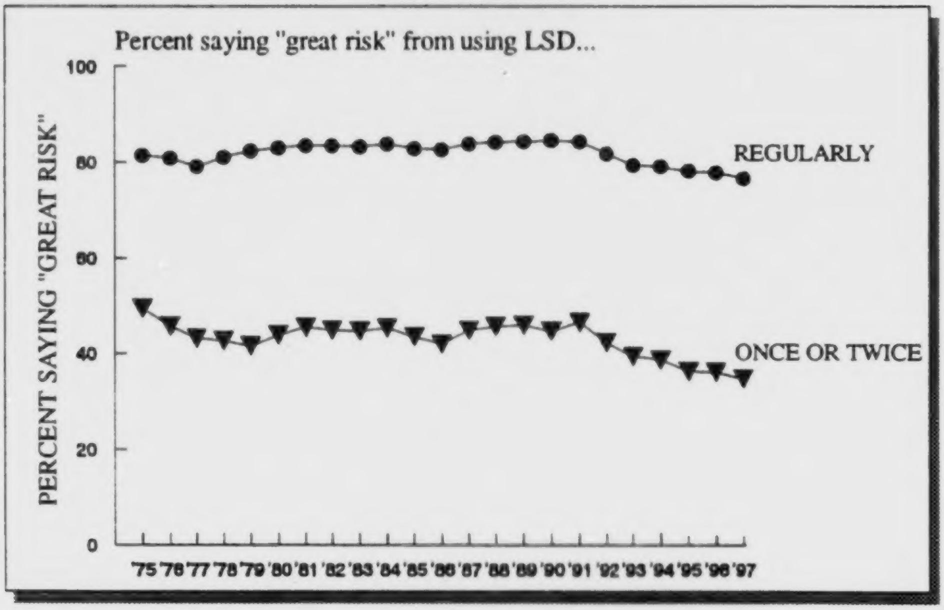


NOTE: Data not available for Eighth and Tenth graders.

FIGURE 8-7a

Trends in Perceived Harmfulness of LSD Use for Eighth, Tenth and Twelfth Graders

Twelfth Graders



Eighth, Tenth and Twelfth Graders

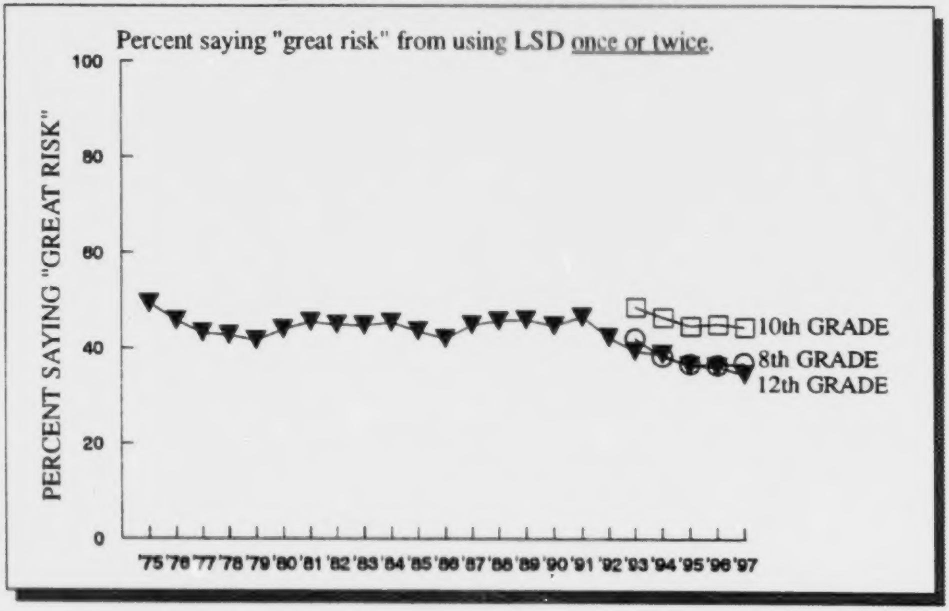
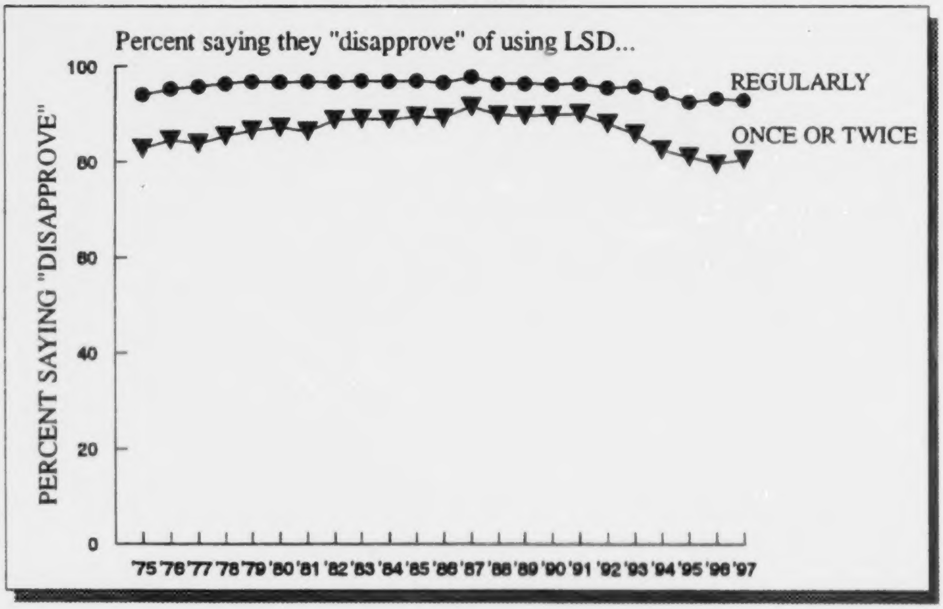


FIGURE 8-7b

Trends in Disapproval of LSD Use for Eighth, Tenth and Twelfth Graders

Twelfth Graders



Eighth, Tenth and Twelfth Graders

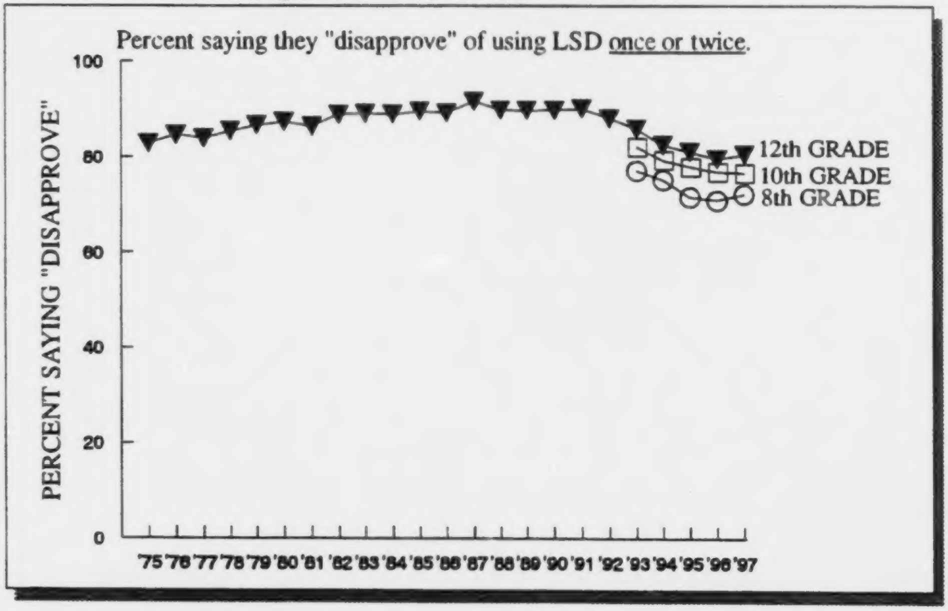
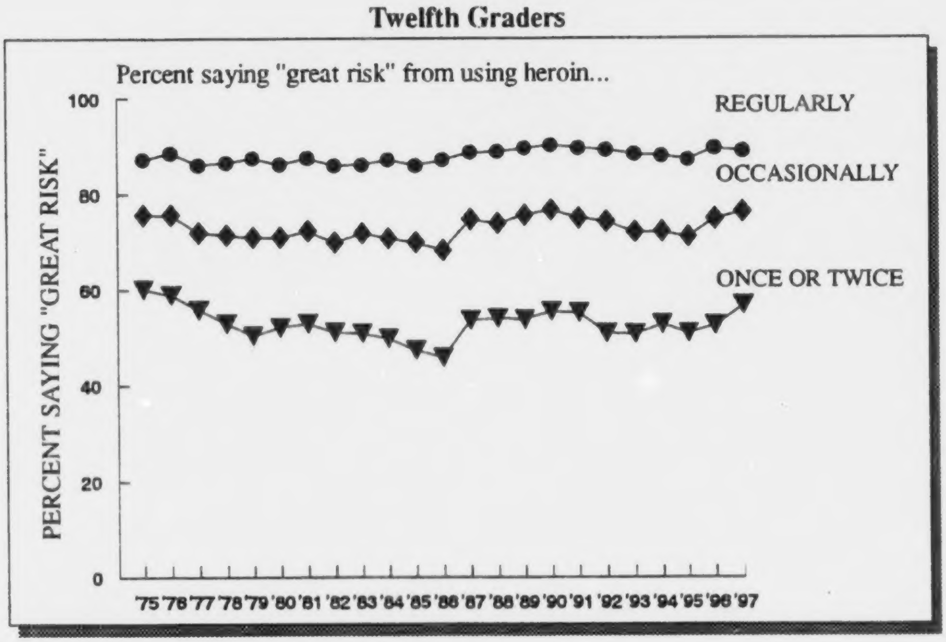


FIGURE 8-8a

Trends in Perceived Harmfulness of Heroin Use for Twelfth Graders

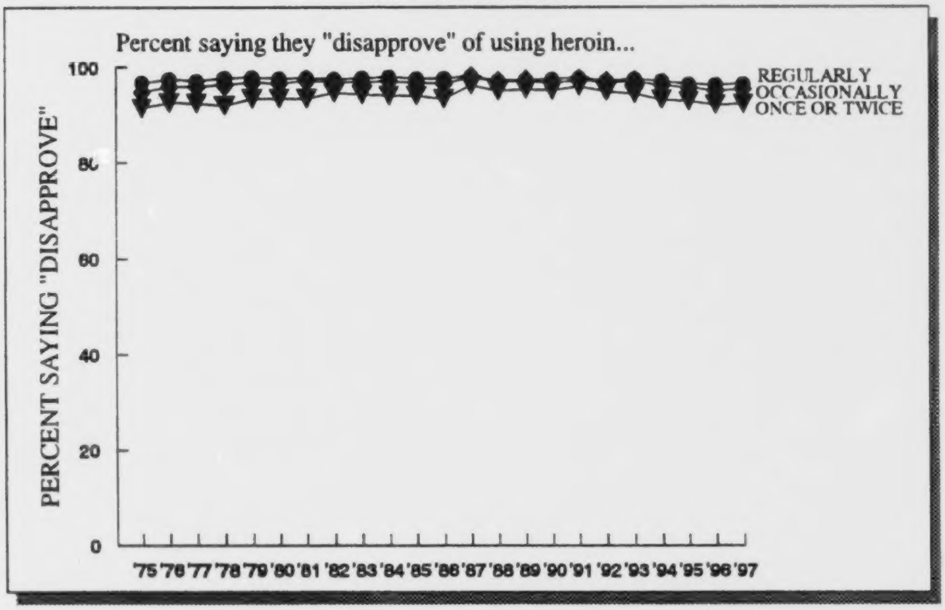


NOTE: Data not available for Eighth and Tenth graders.

FIGURE 8-8b

Trends in Disapproval of Heroin Use for Twelfth Graders

Twelfth Graders



NOTE: Data not available for Eighth and Tenth graders.

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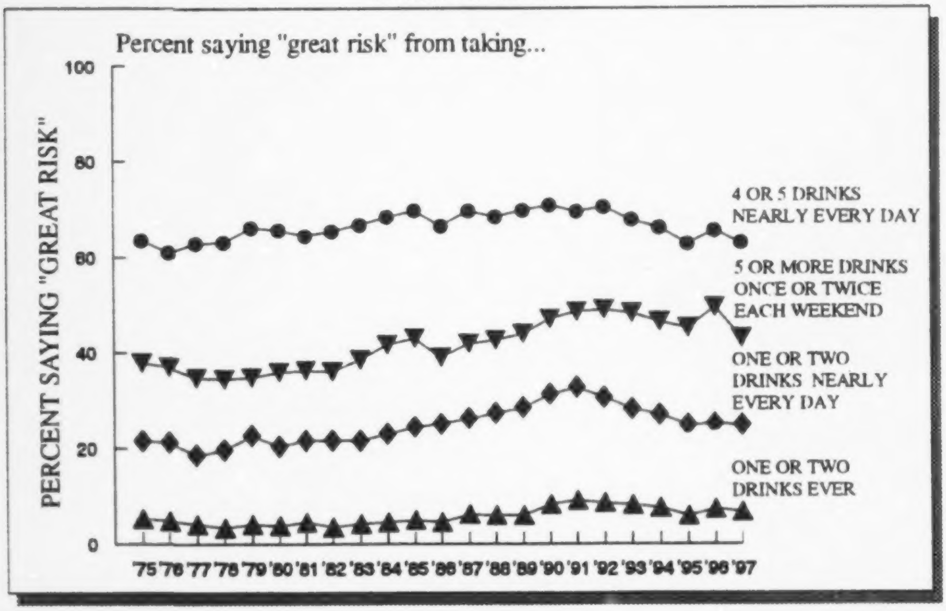
FIGURE 8-9a

Trends in Perceived Harmfulness of Alcohol Use for Eighth, Tenth and Twelfth Graders

Twelfth Graders



Eighth, Tenth and Twelfth Graders

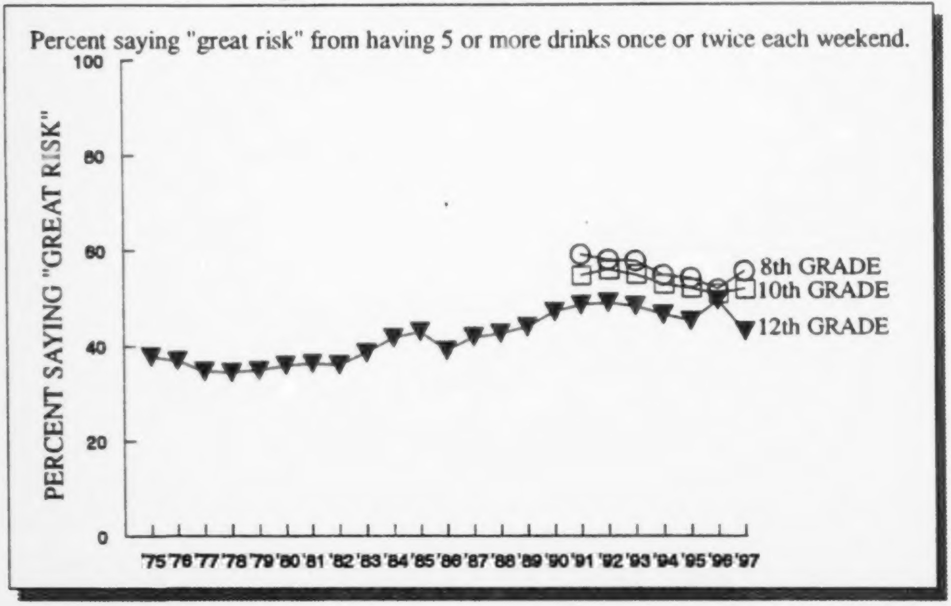
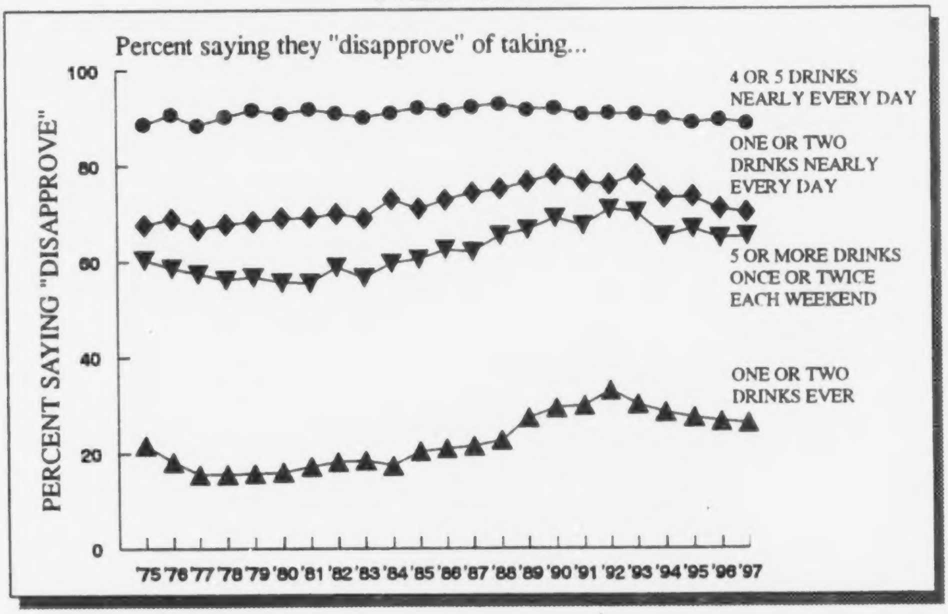


FIGURE 8-9b

Trends in Disapproval of Alcohol Use for Eighth, Tenth and Twelfth Graders

Twelfth Graders



Eighth, Tenth and Twelfth Graders

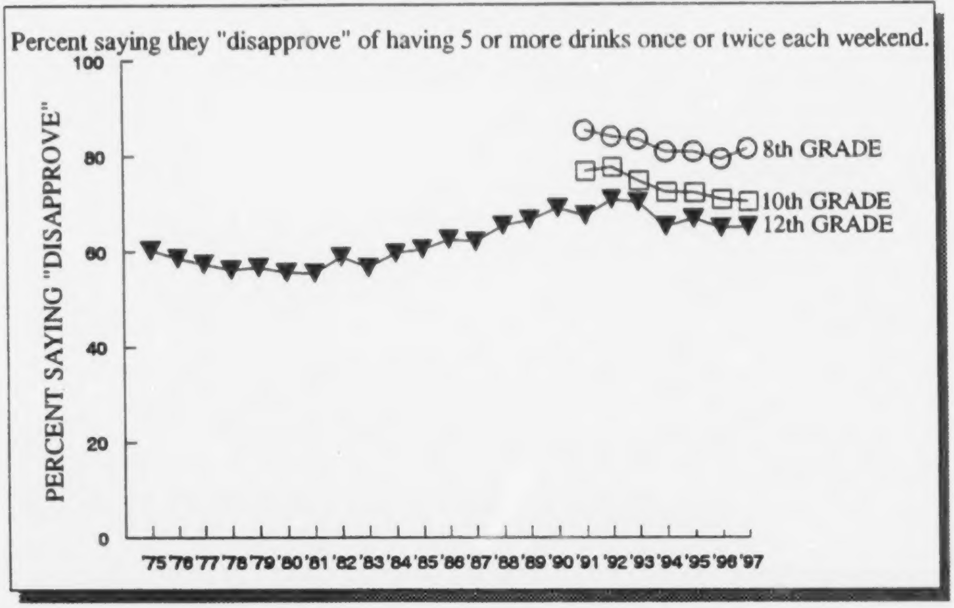


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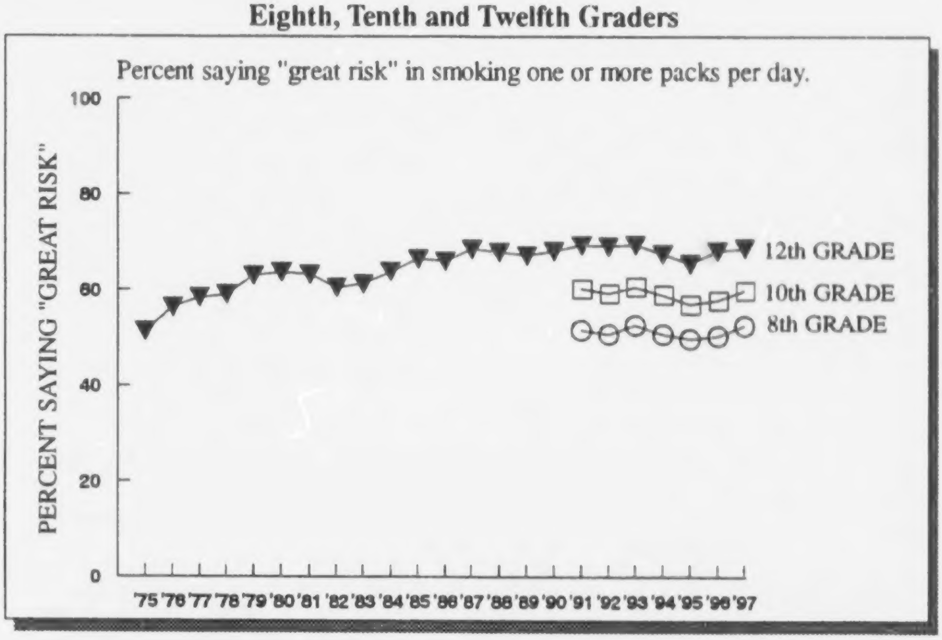
FIGURE 8-10a

Trends in Perceived Harmfulness of Smoking One or More Packs of Cigarettes per Day for Eighth, Tenth and Twelfth Graders



Eighth, Tenth and Twelfth Graders

FIGURE 8-10b

Trends in Disapproval of Smoking One or More Packs of Cigarettes per Day for Eighth, Tenth and Twelfth Graders

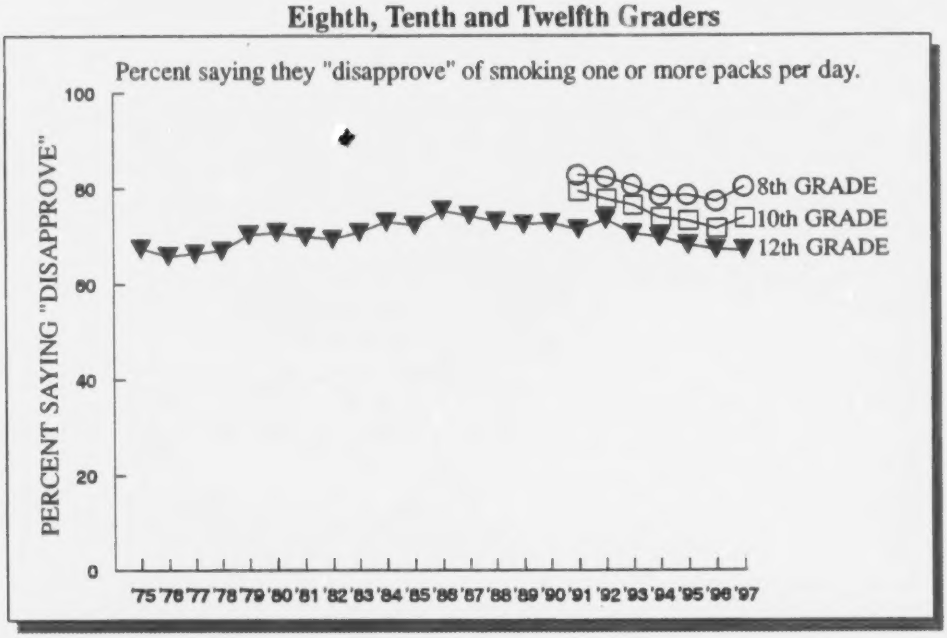
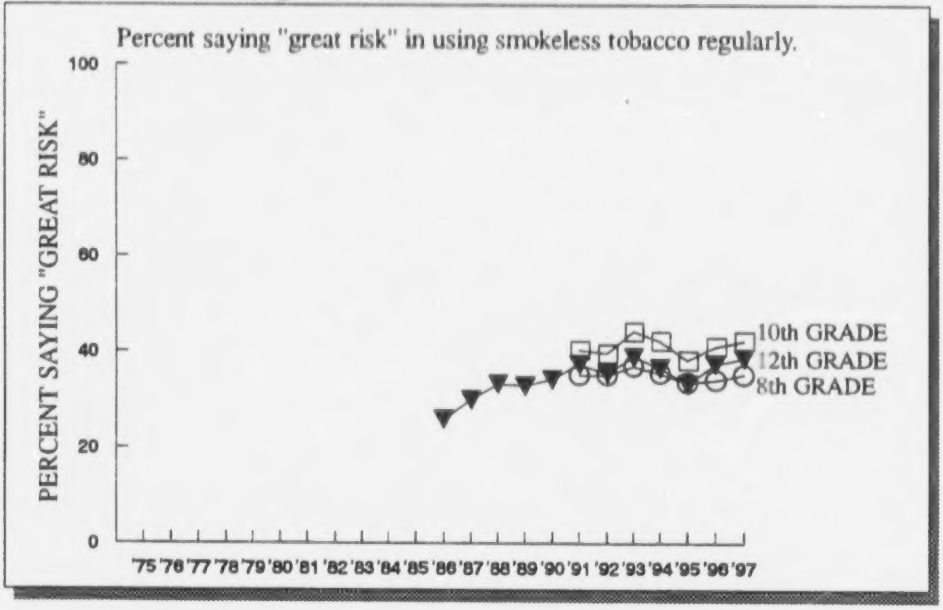

Eighth, Tenth and Twelfth Graders

FIGURE 8-11a

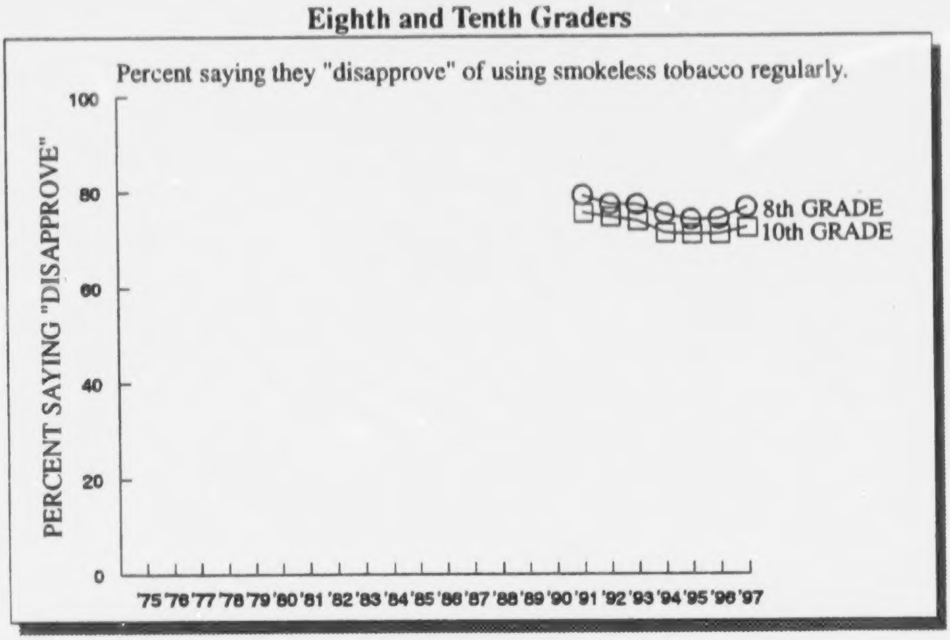
Trends in Perceived Harmfulness of Using Smokeless Tobacco Regularly for Eighth, Tenth and Twelfth Graders



Eighth, Tenth and Twelfth Graders

FIGURE 8-11b

Trends in Disapproval of Using Smokeless Tobacco Regularly for Eighth and Tenth Graders



NOTE: Data not available for Twelfth graders.

3.25

- For each of the drugs included in this set of questions, fewer respondents indicated disapproval of experimental or occasional use than of regular use. However, the differences are not great for the use of illicit drugs other than marijuana, because nearly all seniors disapprove of even experimenting with them. For example, 81% disapprove of experimenting with ***LSD***, 83% with ***cocaine powder***, 86% with ***barbiturates***, 87% with ***crack***, and 92% with ***heroin***. This widespread disapproval of illicit drug use among peers no doubt is underestimated by adolescents themselves and, as we have written elsewhere, provides the basis for some potentially powerful prevention messages.[44]

- For ***marijuana***, the rate of disapproval varies substantially for different usage habits, although not as much as it has in the past. The majority—some 51%—disapprove of even trying marijuana and 79% disapprove of its regular use.

- Smoking a pack (or more) of ***cigarettes*** per day received the disapproval of two-thirds (67%) of twelfth-grade students.

- Taking ***one or two drinks nearly every day*** is disapproved of by 70% of the seniors. Curiously, ***weekend binge drinking*** (five or more drinks once or twice each weekend) is disapproved of by fewer seniors (65%) despite the fact that many more seniors see a great risk in weekend binge drinking (43%) than in having one or two drinks nearly every day (25%).

  One likely explanation for these anomalous findings may be that a greater proportion of this age group are themselves weekend binge drinkers rather than moderate daily drinkers. Therefore, they may express attitudes accepting of their own behavior, even though such attitudes may be somewhat inconsistent with their beliefs about possible consequences. It also may be that the ubiquitous advertising of alcohol use in partying situations has managed to increase social acceptability from what it would be in the absence of such advertising.

Extent of Disapproval Among Eighth and Tenth Graders

- Attitudes about ***inhalant*** use have been asked only of the eighth- and tenth-grade students, and the great majority (84% and 87%, respectively) said they disapprove of even trying them.

- Currently the rates of disapproval for the use of ***crack*** and ***cocaine powder*** are about equivalent across all grade levels (see Table 8-3).

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[44] Johnston, L.D. (1991). Contributions of drug epidemiology to the field of drug abuse prevention. In C. Leukefeld & W. Bukoski (Eds.) *Drug abuse prevention research: Methodological issues* (pp. 57-80). (NIDA Research Monograph 107). Washington, DC: National Institute on Drug Abuse.

- ***Marijuana*** use shows the greatest age-related difference in disapproval rates. The lower the grade level, the higher the rate of disapproval. To illustrate, in 1997, 51% of twelfth graders said they disapprove of trying marijuana compared to 54% of tenth graders and 68% of eighth graders (Table 8-3). There now is considerable evidence that these attitudes do shift with age. For example, the eighth graders of 1991 for the most part constituted the tenth graders of 1993 and the twelfth graders of 1995, and their disapproval of trying marijuana fell from 85% in eighth grade, to 70% by tenth grade, to 57% by twelfth grade. This drop far exceeds the secular trend at any given grade level. It is also possible that there are lasting differences between class cohorts.

- Disapproval of ***alcohol*** use also is higher at the lower grade levels. For example, 65% of the seniors said they disapprove of ***weekend binge drinking*** vs. 70% of the tenth graders and 81% of the eighth graders. Because of the shifts in the minimum drinking ages in a number of states, we think it quite possible that a cohort shift in attitudes about drinking has been taking place, because drinking has been illegal for the younger cohorts for a greater proportion of their lives.

- Similarly, for ***cigarette*** use, 67% of twelfth graders, 74% of tenth graders, and 80% of eighth graders said they disapprove of smoking one or more packs per day. Oddly enough, the eighth graders, who are least likely to see regular smoking as dangerous, are the most likely to disapprove of it.

TRENDS IN DISAPPROVAL OF DRUG USE

Trends in Disapproval Among Twelfth Graders

- Between 1975 and 1977, a substantial decrease occurred in disapproval of ***marijuana*** use at any level of frequency (see Figure 8-1b and Table 8-4). The proportion of seniors in the class of 1977 (compared with the class of 1975) who disapproved of experimenting was 14 percentage points lower, the proportion who disapproved of occasional use was 11 percentage points lower, and the proportion who disapproved of regular use was about 6 percentage points lower. These undoubtedly were continuations of longer-term trends that began in the late 1960s, as the norms of American young people against illicit drug use seriously eroded. Between 1977 and 1990, however, there was a very substantial reversal of that trend when disapproval of experimental marijuana use rose by 34 percentage points, disapproval of occasional use by 36 percentage points, and disapproval of regular use by 26 percentage points. There were no further significant changes in 1991 or 1992, although disapproval of experimental use continued to rise. Beginning in 1993 (a year after perceived risk began to decline), a sharp drop in disapproval of marijuana use emerged. Between 1992 and 1997, disapproval dropped 19 percentage points for experimental use, 17 percentage points for occasional use, and

11 percentage points for regular use. These changes, which are now decelerating, accompanied a significant increase in the self-reported use of marijuana.

- Until 1980 the proportion of seniors who disapproved of trying ***amphetamines*** remained extremely stable at 75% (see Figure 8-6b and Table 8-4). This proportion dropped some in 1981 (to 71%) and then increased gradually until it reached 87% in 1991, where it remained in 1992. After 1992, a reversal began: disapproval dropped by nearly 6 percentage points in two years (and by 7 percentage points by 1996). Self-reported use increased over the same period. In 1997 disapproval began to increase, though not by a statistically significant amount.

- During the late 1970s, personal disapproval of experimenting with ***barbiturates*** increased (from 78% in 1975 to 84% in 1979) and remained relatively stable through 1984, when it began to increase again (Figure 8-6b). By 1990, disapproval had reached 91%. In 1994 it dropped (significantly) to 88%, and then dropped further to 85% by 1996; but, as with amphetamines, disapproval began to rise again in 1997.

- Concurrent with the years of increase in actual ***cocaine*** use, disapproval of experimental use of cocaine declined somewhat, from a high of 82% in 1976 to a low of 75% in 1979 (Figure 8-2b). It then leveled for four years, edged upward for a couple of years to 80% in 1986, and then rose significantly so that 94% of seniors in 1991 disapproved of trying cocaine. Since then, disapproval has slowly declined to 88% in 1997. Disapproval of trying both ***cocaine powder*** and ***crack cocaine*** (Figure 8-3b) peaked in 1992, after which there was a modest fall-off until 1995. Both measures decreased significantly in 1996 and showed little further change in 1997.

- We believe that the parallel trends between perceived risk and disapproval—particularly for marijuana and cocaine use—are no accident. We hypothesize that perceived risk is an important influence on an individual's level of disapproval of a drug-using behavior, although there surely are other influences as well. As levels of personal disapproval change, these individually held attitudes are communicated among friends and acquaintances, and thus perceived norms change as well (as will be illustrated in the next chapter). It is noteworthy that as perceived risk for use of most of the illicit drugs began to reverse in 1991 or 1992, personal disapproval of use of virtually all of them appeared to level. In 1993, personal disapproval among seniors began to drop for use of nearly all of the illicit drugs (see Table 8-4) and it continued to fall for use of many of them through 1997. This time lag suggests that perceived risk influences disapproval, which, in turn, changes peer norms.

- Despite the large changes that seem to have taken place in adult use of cigarettes, young people's disapproval of ***regular cigarette smoking*** (a pack or more per day) has changed surprisingly little throughout this study. Disapproval increased from 68% to 71% between 1975 and 1980. These rates fluctuated slightly throughout the 1980s and early 1990s, never exceeding 75%. In 1997 the disapproval rate was 67%. This lack of change is surprising because so many anti-smoking laws and policies have been enacted. Very likely, the promotion and advertising efforts of the tobacco industry help to account for this lack of change in disapproval as does the widespread portrayal of smoking in movies and television. It is worth noting that the disapproval rates among eighth and tenth graders actually drifted downward in 1991-1996 before rising sharply in 1997. Among seniors, the decline in disapproval occurred from 1992 to 1996, reaching its lowest point (at 67%) since 1982 (Table 8-3 and Figure 8-10b).

- Figure 8-9b tracks disapproval rates for several different patterns of ***alcohol*** use. It shows that twelfth graders' disapproval of most forms of alcohol use rose throughout the 1980s and into the early 1990s.

- Disapproval of weekend ***binge drinking*** rose gradually but substantially, from a low of 56% in 1981 to a high of 71% by 1992. Over that same 11-year interval, the self-reported rate of binge drinking declined from a high of 41% in 1981 to a low of 28% in 1992. The proportion of seniors who disapproved of even ***trying alcohol*** doubled, from a low point of 16% in 1980 to 33% in 1992, before falling back to 26% in 1997 (Figure 8-9b).

  It seems likely that the increased minimum drinking age in many states, between 1981 and 1987, contributed to these changes in attitude about abstention, since more recent senior classes grew up under the higher minimum drinking age.[45] If so, this illustrates the considerable capacity of laws to influence informal norms. It also seems likely that the activities of Mothers Against Drunk Driving, which peaked in 1984, and of the designated driver effort, which occurred mostly in 1989 to 1992, helped to influence these attitudes.

  After 1992, disapproval of binge drinking fell, from 71% in 1992 to 65% by 1994. Since then it has remained fairly stable.

Trends in Disapproval Among Eighth and Tenth Graders

Table 8-4 provides six-year trends (1991-1997) in disapproval for eighth and tenth graders, as well as for twelfth graders.

- In 1992, tenth- and twelfth-grade students showed little change in disapproval of the use of illicit drugs, but eighth graders showed some erosion in their attitudes with respect to using ***marijuana, cocaine***

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[45] O'Malley, P.M., & Wagenaar, A.C. (1991). Effects of minimum drinking age laws on alcohol use, related behaviors, and traffic crash involvement among American youth: 1976-1987. *Journal of Studies on Alcohol, 52*, 478-491.

powder, and ***crack***. In 1993, rates of disapproval for these drugs continued to decline among eighth graders and began to decline among tenth and twelfth graders, as well (Table 8-4 and Figure 8-1b, 8-3b). Between 1993 and 1996, disapproval of both ***marijuana*** use and ***LSD*** use declined in all three grades.

- The declines in personal disapproval have been particularly sharp for ***marijuana*** at all three grade levels. Between 1991 and 1997, the proportion of eighth graders who disapproved of trying marijuana fell from 85% to 68%. Personal disapproval among tenth graders fell from 75% to 54%, and among twelfth graders it fell from 69% to 51% over the same period.

- Since 1993, when these questions were first asked of eighth and tenth graders with regard to using ***LSD***, disapproval of its use has been declining along with perceived risk. Self-reported use has been increasing.

- The softening in attitudes about using ***cocaine powder*** and ***crack*** eventually translated into a change in usage levels. From 1992 through 1996, use of these drugs was up in all grades, some times significantly (see Table 2-1).

- Regarding the use of ***inhalants***, there was a little slippage in the disapproval rates among eighth graders from 1991 to 1995, but none among tenth graders. The rates of use, however, climbed gradually over this period.

- Disapproval of weekend ***binge drinking*** declined among eighth graders between 1991 and 1994, and among tenth and twelfth graders between 1992 and 1994. In 1995 we saw no change in eighth and tenth graders' disapproval of binge drinking. However, the decline resumed for tenth graders in 1996 and 1997 (Figure 8-9b).

- Disapproval of ***cigarette smoking*** also declined significantly from 1991 to 1996 among eighth and tenth graders and since 1992 has been declining among twelfth graders (Figure 8-10b), corresponding to periods of increases in the use of cigarettes.

TABLE 8-3
Trends in Disapproval of Drug Use by Eighth, Tenth, and Twelfth Graders, 1991–97

Percent who "disapprove" or "strongly disapprove"[a]

Do you disapprove of people who . . .	8th Grade								10th Grade								12th Grade[b]							
	1991	1992	1993	1994	1995	1996	1997	'96–'97 change	1991	1992	1993	1994	1995	1996	1997	'96–'97 change	1991	1992	1993	1994	1995	1996	1997	'96–'97 change
Try marijuana once or twice	84.6	82.1	79.2	72.9	70.7	67.5	67.6	+0.1	74.6	74.8	70.3	62.4	59.8	55.5	54.1	-1.4	68.7	69.9	63.3	57.6	56.7	52.5	51.0	-1.5
Smoke marijuana occasionally	89.5	88.1	85.7	80.9	79.7	76.5	78.1	+1.6s	83.7	83.6	79.4	72.3	70.0	66.9	66.2	-0.7	79.4	79.7	75.5	68.9	66.7	62.9	63.2	+0.3
Smoke marijuana regularly	92.1	90.8	88.9	85.3	85.1	82.8	84.6	+1.8s	90.4	90.0	87.4	82.2	81.1	79.7	79.7	0.0	89.3	90.1	87.6	82.3	81.9	80.0	78.8	-1.2
Try inhalants once or twice[c]	84.9	84.0	82.5	81.6	81.8	82.9	84.1	+1.2	85.2	85.6	84.8	84.9	84.5	86.0	86.9	+0.9	—	—	—	—	—	—	—	—
Take inhalants regularly[c]	90.6	90.0	88.9	88.1	88.8	89.3	90.3	+1.0	91.0	91.5	90.9	91.0	90.9	91.7	91.7	0.0	—	—	—	—	—	—	—	—
Try LSD once or twice[d]	—	—	77.1	75.2	71.6	70.9	72.1	+1.2	—	—	82.1	79.3	77.9	76.8	76.6	-0.2	90.1	88.1	85.9	82.5	81.1	79.6	80.5	+0.9
Take LSD regularly[d]	—	—	79.8	78.4	75.8	75.3	76.3	+1.0	—	—	86.8	85.6	84.8	84.5	83.4	-1.1	96.4	95.5	95.8	94.3	92.5	93.2	92.9	-0.3
Try crack once or twice[c]	91.7	90.7	89.1	86.9	85.9	85.0	85.7	+0.7	92.5	92.5	91.4	89.9	88.7	88.2	87.4	-0.8	92.1	93.1	89.9	89.5	91.4	87.4	87.0	-0.4
Take crack occasionally[c]	93.3	92.5	91.7	89.9	89.8	89.3	90.3	+1.0	94.3	94.4	93.6	92.5	91.7	91.9	91.0	-0.9	94.2	95.0	92.8	92.8	94.0	91.2	91.3	+0.1
Try cocaine powder once or twice[c]	91.2	89.6	88.5	86.1	85.3	83.9	85.1	+1.2	90.8	91.1	90.0	88.1	86.8	86.1	85.1	-1.0	88.0	89.4	86.6	87.1	88.3	83.1	83.0	-0.1
Take cocaine powder occasionally[c]	93.1	92.4	91.6	89.7	89.7	88.7	90.1	+1.4s	94.0	94.0	93.2	92.1	91.4	91.1	90.4	-0.7	93.0	93.4	91.2	91.0	92.7	89.7	89.3	-0.4
Try heroin once or twice without using a needle[d]	—	—	—	—	85.8	85.0	87.7	+2.7ss	—	—	—	—	89.7	89.5	89.1	-0.4	—	—	—	—	92.9	90.8	92.3	+1.5
Take heroin occasionally without using a needle[d]	—	—	—	—	88.5	87.7	90.1	+2.4ss	—	—	—	—	91.6	91.7	91.4	-0.3	—	—	—	—	94.7	93.2	94.4	+1.2
Try one or two drinks of an alcoholic beverage (beer, wine, liquor)	51.7	52.2	50.9	47.8	48.0	45.5	45.7	+0.2	37.6	39.9	38.5	36.5	36.1	34.2	33.7	-0.5	29.8	33.0	30.1	28.4	27.3	26.5	26.1	-0.4
Take one or two drinks nearly every day	82.2	81.0	79.6	76.7	75.9	74.1	76.6	+2.5ss	81.7	81.7	78.6	75.2	75.4	73.8	75.4	+1.6	76.5	75.9	77.8	73.1	73.3	70.8	70.0	-0.8
Have five or more drinks once or twice each weekend	85.2	83.9	83.3	80.7	80.7	79.1	81.3	+2.2ss	76.7	77.6	74.7	72.3	72.2	70.7	70.2	-0.5	67.4	70.7	70.1	65.1	66.7	64.7	65.0	+0.3
Smoke one or more packs of cigarettes per day	82.8	82.3	80.6	78.4	78.6	77.3	80.3	+3.0sss	79.4	77.8	76.5	73.9	73.2	71.6	73.8	+2.2s	71.4	73.5	70.6	69.8	68.2	67.2	67.1	-0.1
Use smokeless tobacco regularly	79.1	77.2	77.1	75.1	74.0	74.1	76.5	+2.4ss	75.4	74.6	73.8	71.2	71.0	71.0	72.3	+1.3	—	—	—	—	—	—	—	—
Take steroids[e]	89.8	90.3	89.9	87.9	—	—	—	—	90.0	91.0	91.2	90.8	—	—	—	—	90.5	92.1	92.1	91.9	91.0	91.7	91.4	-0.3
Approx. N =	*17390*	*18503*	*18435*	*17429*	*17560*	*17998*	*18765*		*14750*	*14774*	*15334*	*15891*	*17016*	*15686*	*15627*		*2547*	*2645*	*2723*	*2588*	*2603*	*2399*	*2601*	

NOTES: Level of significance of difference between the two most recent classes: s =.05, ss =.01, sss =.001. '—' indicates data not available.
SOURCE: The Monitoring the Future Study, the University of Michigan.

[a] Answer alternatives were: (1) Don't disapprove, (2) Disapprove, (3) Strongly disapprove. For 8th and 10th grades, there was another category—"Can't say, drug unfamiliar"—which was included in the calculation of these percentages.

[b] The twelfth grade questions ask about people who are 18 or older.

[c] 8th and 10th grade: Data based in 1997 on two-thirds of N indicated due to changes in questionnaire forms.

[d] 8th and 10th grade: Data based on one of two forms in 1993–96; N is one-half of N indicated. Data based in 1997 on one-third of N indicated due to changes in questionnaire forms.

[e] 8th and 10th grade: Data based on two forms in 1991 and 1992 and on one of two forms in 1993 and 1994; N is one-half of N indicated.

TABLE 8-4
Long-Term Trends in Disapproval of Drug Use by Twelfth Graders

Do you disapprove of people (who are 18 or older) doing each of the following?[a,b]	Percentage "disapproving"[a]																							
	Class of 1975	Class of 1976	Class of 1977	Class of 1978	Class of 1979	Class of 1980	Class of 1981	Class of 1982	Class of 1983	Class of 1984	Class of 1985	Class of 1986	Class of 1987	Class of 1988	Class of 1989	Class of 1990	Class of 1991	Class of 1992	Class of 1993	Class of 1994	Class of 1995	Class of 1996	Class of 1997	'96-'97 change
Try marijuana once or twice	47.0	38.4	33.4	33.4	34.2	39.0	40.0	45.5	46.3	49.3	51.4	54.6	56.6	60.8	64.6	67.8	68.7	69.9	63.3	57.6	56.7	52.5	51.0	-1.5
Smoke marijuana occasionally	54.8	47.8	44.3	43.5	45.3	49.7	52.6	59.1	60.7	63.5	65.8	69.0	71.6	74.0	77.2	80.5	79.4	79.7	75.5	68.9	66.7	62.9	63.2	+0.3
Smoke marijuana regularly	71.9	69.5	65.5	67.5	69.2	74.6	77.4	80.6	82.5	84.7	85.5	86.6	89.2	89.3	89.8	91.0	89.3	90.1	87.6	82.3	81.9	80.0	78.8	-1.2
Try LSD once or twice	82.8	84.6	83.9	85.4	86.6	87.3	86.4	88.8	89.1	88.9	89.5	89.2	91.6	89.8	89.7	89.8	90.1	88.1	85.9	82.5	81.1	79.6	80.5	+0.9
Take LSD regularly	94.1	95.3	95.8	96.4	96.9	96.7	96.8	96.7	97.0	96.8	97.0	96.6	97.8	96.4	96.4	96.3	96.4	95.5	95.8	94.3	92.5	93.2	92.9	-0.3
Try MDMA once or twice	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	...	82.2	—
Try cocaine once or twice	81.3	82.4	79.1	77.0	74.7	76.3	74.6	76.6	77.0	79.7	79.3	80.2	87.3	89.1	90.5	91.5	93.6	93.0	92.7	91.6	90.3	90.0	88.0	-2.0
Take cocaine regularly	93.3	93.9	92.1	91.9	90.8	91.1	90.7	91.5	93.2	94.5	93.8	94.3	96.7	96.2	96.4	96.7	97.3	96.9	97.5	96.6	96.1	95.6	96.0	+0.4
Try crack once or twice	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	92.3	92.1	93.1	89.9	89.5	91.4	87.4	87.0	-0.4
Take crack occasionally	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	94.3	94.2	95.0	92.8	92.8	94.0	91.2	91.3	+0.1
Take crack regularly	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	94.9	95.0	95.5	93.4	93.1	94.1	93.0	92.3	-0.7
Try coke powder once or twice	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	87.9	88.0	89.4	86.6	87.1	88.3	83.1	83.0	-0.1
Take coke powder occasionally	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	92.1	93.0	93.4	91.2	91.0	92.7	89.7	89.3	-0.4
Take coke powder regularly	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	93.7	94.4	94.3	93.0	92.5	93.8	92.9	91.5	-1.4
Try heroin once or twice	91.5	92.6	92.5	92.0	93.4	93.5	93.5	94.6	94.3	94.0	94.0	93.3	96.2	95.0	95.4	95.1	96.0	94.9	94.4	93.2	92.8	92.1	92.3	+0.2
Take heroin occasionally	94.8	96.0	96.0	96.4	96.8	96.7	97.2	96.9	96.9	97.1	96.8	96.6	97.9	96.9	97.2	96.7	97.3	96.8	97.0	96.2	95.7	95.0	95.4	+0.4
Take heroin regularly	96.7	97.5	97.2	97.8	97.9	97.6	97.8	97.5	97.7	98.0	97.6	97.6	98.1	97.2	97.4	97.5	97.8	97.2	97.5	97.1	96.4	96.3	96.4	+0.1
Try amphetamines once or twice	74.8	75.1	74.2	74.8	75.1	75.4	71.1	72.6	72.3	72.8	74.9	76.5	80.7	82.5	83.3	85.3	86.5	86.9	84.2	81.3	82.2	79.9	81.3	+1.4
Take amphetamines regularly	92.1	92.8	92.5	93.5	94.4	93.0	91.7	92.0	92.6	93.6	93.3	93.5	95.4	94.2	94.2	95.5	96.0	95.6	96.0	94.1	94.3	93.5	94.3	+0.8
Try barbiturates once or twice	77.7	81.3	81.1	82.4	84.0	83.9	82.4	84.4	83.1	84.1	84.9	86.8	89.6	89.4	89.3	90.5	90.6	90.3	89.7	87.5	87.3	84.9	86.4	+1.5
Take barbiturates regularly	93.3	93.6	93.0	94.3	95.2	95.4	94.2	94.4	95.1	95.1	95.5	94.9	96.4	95.3	95.3	96.4	97.1	96.5	97.0	96.1	95.2	94.8	95.3	+0.5
Try one or two drinks of an alcoholic beverage (beer, wine, liquor)	21.6	18.2	15.6	15.6	15.8	16.0	17.2	18.2	18.4	17.4	20.3	20.9	21.4	22.6	27.3	29.4	29.8	33.0	30.1	28.4	27.3	26.5	26.1	-0.4
Take one or two drinks nearly every day	67.6	68.9	66.8	67.7	68.3	69.0	69.1	69.9	68.9	72.9	70.9	72.8	74.2	75.0	76.5	77.9	76.5	75.9	77.8	73.1	73.3	70.8	70.0	-0.8
Take four or five drinks nearly every day	88.7	90.7	88.4	90.2	91.7	90.8	91.8	90.9	90.0	91.0	92.0	91.4	92.2	92.8	91.6	91.9	90.6	90.8	90.6	89.8	88.8	89.4	88.6	-0.8
Have five or more drinks once or twice each weekend	60.3	58.6	57.4	56.2	56.7	55.6	55.5	58.8	56.6	59.6	60.4	62.4	62.0	65.3	66.5	68.9	67.4	70.7	70.1	65.1	66.7	64.7	65.0	+0.3
Smoke one or more packs of cigarettes per day	67.5	65.9	66.4	67.0	70.3	70.8	69.9	69.4	70.8	73.0	72.3	75.4	74.3	73.1	72.4	72.8	71.4	73.5	70.6	69.8	68.2	67.2	67.1	-0.1
Take steroids	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	90.8	90.5	92.1	92.1	91.9	91.0	91.7	91.4	-0.3
Approx. N =	*2677*	*2957*	*3085*	*3686*	*3221*	*3261*	*3610*	*3651*	*3341*	*3254*	*3265*	*3113*	*3302*	*3311*	*2799*	*2566*	*2547*	*2645*	*2723*	*2588*	*2603*	*2399*	*2601*	

NOTES: Level of significance of difference between the two most recent classes: s = .05, ss = .01, sss = .001. '—' indicates data not available.
SOURCE: The Monitoring the Future Study, the University of Michigan.

[a] Answer alternatives were: (1) Don't disapprove, (2) Disapprove, and (3) Strongly disapprove. Percentages are shown for categories (2) and (3) combined.
[b] The 1975 question asked about people who are "20 or older."

ATTITUDES REGARDING THE LEGALITY OF DRUG USE

At the beginning of the study in 1975, legal restraints on drug use appeared likely to be in a state of flux for some time; therefore, we decided to measure attitudes about legal sanctions. As it turns out, some dramatic changes in these attitudes have occurred during the life of the study. Table 8-5 presents a set of questions on this subject along with the answers provided by each senior class. The set lists a sampling of illicit and licit drugs and asks respondents whether their use should be prohibited by law. A distinction is made between use in public and use in private—one that proved quite important. (These questions have not been asked of the eighth- and tenth-grade respondents.)

Attitudes of Twelfth Graders

- The great majority of seniors believe that the use in public of ***illicit drugs other than marijuana*** should be prohibited by law. For instance, in the case of ***amphetamines*** or ***barbiturates***, 77% of the seniors believe that use in public should be prohibited, and 84% believe that such use of ***heroin*** should be prohibited. Even use in private is opposed by the majority, though by smaller proportions: for example, 55% believe that the use in private of ***barbiturates*** or ***amphetamines*** should be illegal, 61% for ***LSD*** use, and 71% for ***heroin*** use.

- The great majority of seniors (69%) also favor legally prohibiting ***marijuana*** use in public places, despite the fact that half have used marijuana themselves and despite the fact that many do not judge it to be as dangerous as other drugs. Considerably fewer (39%) feel that marijuana use in private should be prohibited.

- Some 41% of twelfth graders believe that ***cigarette smoking*** in "certain specified public places" should be prohibited by law. Somewhat more think ***getting drunk*** in public should be prohibited (52%). Were the question more specific as to the types of public places in which smoking might be prohibited (e.g., restaurants and hospitals), quite different results might have emerged.

- For ***all drugs*** included in the question, fewer seniors believe that use in private settings should be illegal. This is particularly true for ***alcohol*** and ***marijuana***.

Trends in These Attitudes Among Twelfth Graders

- From 1975 through 1978 there were modest declines (shifts of 5 to 7 percentage points, depending on the substance) in the proportions of seniors who favored legal prohibition of private use of any of the five illicit drugs (see Table 8-5). By 1990, all of these proportions had increased substantially, with shifts of 8 to 31 percentage points. The proportion who thought ***marijuana*** use in private should be prohibited by law more than doubled, from 25% in 1978 to 56% in 1990—a dramatic shift.

TABLE 8-5

Trends in Twelfth Graders' Attitudes Regarding Legality of Drug Use

Q. Do you think that people (who are 18 or older) should be prohibited by law from doing each of the following?[b]	Percent saying "yes"[a]																							
	Class of 1975	Class of 1976	Class of 1977	Class of 1978	Class of 1979	Class of 1980	Class of 1981	Class of 1982	Class of 1983	Class of 1984	Class of 1985	Class of 1986	Class of 1987	Class of 1988	Class of 1989	Class of 1990	Class of 1991	Class of 1992	Class of 1993	Class of 1994	Class of 1995	Class of 1996	Class of 1997	'96–'97 change
Smoke marijuana in private	32.8	27.5	26.8	25.4	28.0	28.9	35.4	36.6	37.8	41.6	44.7	43.8	47.6	51.8	51.5	56.0	51.6	52.4	48.0	42.9	44.0	40.4	38.8	-1.6
Smoke marijuana in public places	63.1	59.1	58.7	59.5	61.8	66.1	67.4	72.8	73.6	75.2	78.2	78.9	79.7	81.3	80.0	81.9	79.8	78.3	77.3	72.5	72.9	70.0	69.4	-0.6
Take LSD in private	67.2	65.1	63.3	62.7	62.4	65.8	62.6	67.1	66.7	67.9	70.6	69.0	70.8	71.5	71.6	72.9	68.1	67.2	63.5	63.2	64.3	62.0	61.2	-0.8
Take LSD in public places	85.8	81.9	79.3	80.7	81.5	82.8	80.7	82.1	82.8	82.4	84.8	84.9	85.2	86.0	84.4	84.9	83.9	82.2	82.1	80.5	81.5	79.2	80.3	+1.1
Take heroin in private	76.3	72.4	69.2	68.8	68.5	70.3	68.8	69.3	69.7	69.8	73.3	71.7	75.0	74.2	74.4	76.4	72.8	71.4	70.7	70.1	72.2	70.8	70.6	-0.2
Take heroin in public places	90.1	84.8	81.0	82.5	84.0	83.8	82.4	82.5	83.7	83.4	85.8	85.0	86.2	86.6	85.2	86.7	85.4	83.3	84.5	82.9	84.8	82.3	84.3	+2.0
Take amphetamines or barbiturates in private	57.2	53.5	52.8	52.2	53.4	54.1	52.0	53.5	52.8	54.4	56.3	56.8	59.1	60.2	61.1	64.5	59.7	60.5	57.4	55.7	57.5	54.6	54.6	0.0
Take amphetamines or barbiturates in public places	79.6	76.1	73.7	75.8	77.3	76.1	74.2	75.5	76.7	76.8	78.3	79.1	79.8	80.2	79.2	81.6	79.7	78.5	78.0	76.4	77.6	74.3	76.5	+2.2
Get drunk in private	14.1	15.6	18.6	17.4	16.8	16.7	19.6	19.4	19.9	19.7	19.8	18.5	18.6	19.2	20.2	23.0	22.0	24.4	22.1	21.0	21.6	21.4	20.5	-0.9
Get drunk in public places	55.7	50.7	49.0	50.3	50.4	48.3	49.1	50.7	52.2	51.1	53.1	52.2	53.2	53.8	52.6	54.6	54.3	54.1	53.6	54.3	54.5	52.8	51.7	-1.1
Smoke cigarettes in certain specified public places	—	—	42.0	42.2	43.1	42.8	43.0	42.0	40.5	39.2	42.8	45.1	44.4	48.4	44.5	47.3	44.9	47.6	45.9	47.3	45.1	43.4	41.3	-2.1
Approx. N =	*2620*	*2959*	*3113*	*3783*	*3288*	*3224*	*3611*	*3627*	*3315*	*3236*	*3254*	*3074*	*3332*	*3288*	*2813*	*2571*	*2512*	*2671*	*2759*	*2603*	*2578*	*2422*	*2587*	

NOTES: Level of significance of difference between the two most recent classes: s = .05, ss = .01, sss = .001. '—' indicates data not available.
SOURCE: The Monitoring the Future Study, the University of Michigan.

[a] Answer alternatives were: (1) No, (2) Not sure, and (3) Yes.
[b] The 1975 question asked about people who are "20 or older."

Between 1990 and 1996, positions on prohibition of the use of all the illicit drugs softened again, particularly in the case of marijuana, where the percentage favoring prohibitive laws fell from 56% in 1990 to 40% in 1996. In 1997, most of these declines ended.

- There has been rather little change in the proportion of seniors who said ***smoking cigarettes*** "in certain specified public places" should be prohibited by law. In 1977, 42% held this view vs. 41% in 1997, twenty years later.
- Attitudes about the legality of ***drunkenness*** in public or private places have changed little, but there has been a small change toward less tolerance of that behavior. The stability of attitudes about the preferred legality for this culturally ingrained drug-using behavior contrasts sharply with the lability of attitudes regarding the legality of using the illicit drugs.

THE LEGAL STATUS OF MARIJUANA

Another set of questions asks in more detail about what legal sanctions, if any, seniors think should be attached to the use and sale of marijuana. Respondents also are asked to guess how they would be likely to react to the legalized use and sale of the drug. The answers to such a hypothetical question must be interpreted cautiously, of course.

Attitudes and Predicted Responses to Legalization

- As shown in Table 8-6, in 1997 just over one-third (34%) of all seniors believed that marijuana use should be treated as a crime. Nearly one-third thought it should be entirely legal (31%), and about another one-fifth (21%) felt it should be treated as a minor violation—like a parking ticket—but not as a crime.
- Asked whether they thought it should be legal to sell marijuana *if* it were legal to use it, just over half (57%) said "yes." However, almost four out of five of these respondents (45% of all respondents) would permit sale *only* to adults. A small minority (13%) favored sale to anyone, regardless of age.
- Most high school seniors felt that they would be little affected personally by the legalization of either the sale or the use of marijuana. More than half (56%) of the respondents said that they would not use the drug even if it were legal to buy and use it, and another 18% indicated they would use it about as often as they do now or less often. Only 6% said they would use it more often than at present and only another 9% thought they would try it. Some 8% said they did not know how their behavior would be affected if marijuana were legalized.

TABLE 8-6

Trends in Twelfth Graders' Attitudes Regarding Marijuana Laws

(Entries are percentages)

Q. *There has been a great deal of public debate about whether marijuana use should be legal. Which of the following policies would you favor?*	Class of 1975	Class of 1976	Class of 1977	Class of 1978	Class of 1979	Class of 1980	Class of 1981	Class of 1982	Class of 1983	Class of 1984	Class of 1985	Class of 1986	Class of 1987	Class of 1988	Class of 1989	Class of 1990	Class of 1991	Class of 1992	Class of 1993	Class of 1994	Class of 1995	Class of 1996	Class of 1997
Using marijuana should be entirely legal	27.3	32.6	33.6	32.9	32.1	26.3	23.1	20.0	18.9	18.6	16.6	14.9	15.4	15.1	16.6	15.9	18.0	18.7	22.8	26.8	30.4	31.2	30.8
It should be a minor violation like a parking ticket but not a crime	25.3	29.0	31.4	30.2	30.1	30.9	29.3	28.2	26.3	23.6	25.7	25.9	24.6	21.9	18.9	17.4	19.2	18.0	18.7	19.0	18.0	21.0	20.7
It should be a crime	30.5	25.4	21.7	22.2	24.0	26.4	32.1	34.7	36.7	40.6	40.8	42.5	45.3	49.2	50.0	53.2	48.6	47.6	43.4	39.4	37.3	33.8	34.0
Don't know	16.8	13.0	13.4	14.6	13.8	16.4	15.4	17.1	18.1	17.2	16.9	16.7	14.8	13.9	14.6	13.6	14.3	15.7	15.1	14.8	14.4	13.9	14.5
Q. *If it were legal for people to USE marijuana, should it also be legal to SELL marijuana?*																							
No	27.8	23.0	22.5	21.8	22.9	25.0	27.7	29.3	27.4	30.9	32.6	33.0	36.0	36.8	38.8	40.1	36.8	37.8	36.7	33.1	32.3	29.4	29.1
Yes, but only to adults	37.1	49.8	52.1	53.6	53.2	51.8	48.6	46.2	47.6	45.8	43.2	42.2	41.2	39.9	37.9	38.8	41.4	39.5	40.7	41.7	43.4	46.7	44.8
Yes, to anyone	16.2	13.3	12.7	12.0	11.3	9.6	10.5	10.7	10.5	10.6	11.2	10.4	9.2	10.5	9.2	9.6	9.4	9.6	10.1	11.6	11.7	11.1	12.5
Don't know	18.9	13.9	12.7	12.6	12.6	13.6	13.2	13.8	14.6	12.8	13.1	14.4	13.6	12.8	14.1	11.6	12.5	13.1	12.5	13.7	12.6	12.8	13.7
Q. *If marijuana were legal to use and legally available, which of the following would you be most likely to do?*																							
Not use it, even if it were legal and available	53.2	50.4	50.6	46.4	50.2	53.3	55.2	60.0	60.1	62.0	63.0	62.4	64.9	69.0	70.1	72.9	70.7	72.5	69.0	64.6	60.2	59.9	56.4
Try it	8.2	8.1	7.0	7.1	6.1	6.8	6.0	6.3	7.2	6.6	7.5	7.6	7.3	7.1	6.7	7.0	6.3	7.4	7.3	7.6	8.8	8.8	9.1
Use it about as often as I do now	22.7	24.7	26.8	30.9	29.1	27.3	24.8	21.7	19.8	19.1	17.7	16.8	16.2	13.1	13.0	10.1	11.7	10.2	11.9	14.3	17.1	17.3	18.4
Use it more often than I do now	6.0	7.1	7.4	6.3	6.0	4.2	4.7	3.8	4.9	4.7	3.7	5.0	4.1	4.3	2.4	2.7	3.3	3.2	3.5	4.7	4.9	4.8	6.1
Use it less often than I do now	1.3	1.5	1.5	2.7	2.5	2.6	2.5	2.2	1.5	1.6	1.6	2.0	1.3	1.5	2.1	1.1	1.6	1.0	1.4	1.5	1.6	1.6	2.0
Don't know	8.5	8.1	6.6	6.7	6.1	5.9	6.9	6.0	6.4	6.0	6.5	6.1	6.3	5.0	5.7	6.1	6.4	5.7	7.0	7.3	7.4	7.7	7.9
Approx. N =	*2600*	*2970*	*3110*	*3710*	*3280*	*3210*	*3600*	*3620*	*3300*	*3220*	*3230*	*3080*	*3330*	*3277*	*2812*	*2570*	*2515*	*2672*	*2768*	*2597*	*2574*	*2426*	*2585*

SOURCE: The Monitoring the Future Study, the University of Michigan.

A special study of the effects of decriminalization at the state level during the late 1970s[46] (which falls well short of the fully legalized situation posited in this question) revealed no evidence of any impact of decriminalization on the use of marijuana, nor even on attitudes and beliefs concerning its use. However, the situation today is very different, with much more peer disapproval and more rigorous enforcement. The symbolic message, and the impact, of legalizing or decriminalizing marijuana under these circumstances would likely be different. Therefore, we do not believe that those findings from the late 1970s can be validly generalized to the legalization of marijuana today.

Trends in Attitudes and Predicted Responses

- Between 1978 and 1990, American young people became much more supportive of legal prohibitions of the use of illegal drugs, whether used in private or in public (Table 8-5).

- Between 1976 and 1979, seniors' preferences for decriminalization or legalization of marijuana remained fairly constant; but between 1979 and 1990 the proportion favoring outright legalization dropped by half (from 32% in 1979 to 16% in 1990), while there was a corresponding doubling in the proportion saying marijuana use should be a crime (from 24% to 53%). Also reflecting this increased conservatism about marijuana use, somewhat fewer said they would support legalized *sale* even if *use* were made legal (down from 65% in 1979 to 48% in 1990).

  After 1990 these policy attitudes began to soften again. Fewer favored criminal penalties and more favored legal sale (see Table 8-6). For example, in 1996 the proportion saying that using marijuana should be entirely legal was 31%, up from 16% in 1990. As with some of the other attitudes treated in this volume, there was a leveling in these attitudes in 1997.

- The predictions about personal marijuana use, if sale and use were legalized, have been quite similar for all high school classes. The slight shifts being observed are mostly attributable to the changing proportions of seniors who actually use marijuana.

- As with all of the other attitudes and beliefs examined in this chapter, the long-term, anti-drug changes appear to have leveled or reversed since 1990.

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[46] See Johnston, L.D., O'Malley, P.M., & Bachman, J.G. (1981). *Marijuana decriminalization: The impact on youth, 1975-1980* (Monitoring the Future Occasional Paper No. 13). Ann Arbor: Institute for Social Research.

Chapter 9

THE SOCIAL MILIEU

In the preceding chapter we dealt with students' own attitudes about various forms of drug use. Such attitudes about drug use, as well as drug-related behaviors, obviously do not emerge in a social vacuum. Drugs are discussed in the media; they are a topic of considerable interest and conversation among young people; they are also a matter of much concern to parents, concern that often is strongly communicated to their children. We know young people are affected by the actual drug-taking behaviors of their friends and acquaintances, as well as by the availability of the various drugs. This section presents data on several of these relevant aspects of the social milieu.

We begin with questions about parental and peer attitudes, questions that closely parallel the questions about respondents' own attitudes about drug use. Measures of perceived parental attitudes were included in the study in 1975-1979, but these measures were dropped because there was little variation over time in students' responses. Thus, the data discussed in this chapter are based on those early results.

PERCEIVED ATTITUDES OF PARENTS AND FRIENDS: TWELFTH GRADERS

Perceptions of Parental Attitudes

- Drug use appears to constitute one area in which the position of parents approaches unanimity. Even at the height of the drug epidemic in 1979, a large majority of seniors reported that their parents would disapprove or strongly disapprove of their doing ***any of the drug use behaviors*** listed in Table 9-1. (The data for the perceived parental attitudes are not provided in tabular form, but they are displayed in Figures 9-1a, 9-1b, and 9-2.)

- In 1979, over 97% of seniors said that their parents would disapprove or strongly disapprove of their smoking ***marijuana*** regularly, even trying ***LSD*** or ***amphetamines***, or having four or five ***drinks*** every day. (Although the questions did not ask about more frequent use of LSD or amphetamines or about any use of heroin, it is obvious that if such behaviors had been included in the list, virtually all seniors would have indicated parental disapproval.)

- Even experimental use of ***marijuana*** was seen as a parentally disapproved of activity by the great majority of the 1979 seniors (85%). Assuming that the students were generally correct about their parents' attitudes, these results clearly showed a substantial generational difference of opinion about this drug at that time.

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TABLE 9-1

Trends in Proportion of Friends Disapproving of Drug Use
Twelfth Graders

Q.	Percent saying friends disapprove[a]																							
How do you think your close friends feel (or would feel) about you . . .	Class of 1975[b]	Class of 1976	Class of 1977[b]	Class of 1978	Class of 1979[b]	Class of 1980	Class of 1981	Class of 1982	Class of 1983	Class of 1984	Class of 1985	Class of 1986	Class of 1987	Class of 1988	Class of 1989	Class of 1990	Class of 1991	Class of 1992	Class of 1993	Class of 1994	Class of 1995	Class of 1996	Class of 1997	'96-'97 change
Trying marijuana once or twice	44.3	—	41.8	—	40.9	42.6	46.4	50.3	52.0	54.1	54.7	56.7	58.0	62.9	63.7	70.3	69.7	73.1	66.6	62.7	58.1	55.8	53.0	-2.8
Smoking marijuana occasionally	54.8	—	49.0	—	48.2	50.6	55.9	57.4	59.9	62.9	64.2	64.4	67.0	72.1	71.1	76.4	75.8	79.2	73.8	69.1	65.4	63.1	59.9	-3.2
Smoking marijuana regularly	75.0	—	69.1	—	70.2	72.0	75.0	74.7	77.6	79.2	81.0	82.3	82.9	85.5	84.9	86.7	85.9	88.0	83.5	80.6	78.9	76.1	74.1	-2.0
Trying LSD once or twice	85.6	—	86.6	—	87.6	87.4	86.5	87.8	87.8	87.6	88.6	89.0	87.9	89.5	88.4	87.9	87.9	87.3	83.5	83.4	82.6	80.8	79.3	-1.5
Trying cocaine once or twice	—	—	—	—	—	—	—	—	—	—	—	79.6	83.9	88.1	88.9	90.5	91.8	92.2	91.1	91.4	91.1	89.2	87.3	-1.9
Taking cocaine occasionally	—	—	—	—	—	—	—	—	—	—	—	87.3	89.7	92.1	92.1	94.2	94.7	94.4	93.7	93.9	93.8	92.5	90.8	-1.7
Trying crack once or twice	—	—	—	—	—	—	—	—	—	—	—	—	—	—	94.2	95.0	94.4	94.6	95.1	93.9	93.8	93.0	92.3	-0.7
Taking crack occasionally	—	—	—	—	—	—	—	—	—	—	—	—	—	—	95.7	96.5	95.7	95.9	96.4	95.3	96.1	94.7	94.8	+0.1
Trying coke powder once or twice	—	—	—	—	—	—	—	—	—	—	—	—	—	—	91.7	93.4	93.3	94.0	94.2	93.2	93.5	92.1	91.4	-0.7
Taking coke powder occasionally	—	—	—	—	—	—	—	—	—	—	—	—	—	—	94.0	95.0	94.8	94.8	95.2	94.7	95.3	93.6	93.9	+0.3
Trying an amphetamine once or twice	78.8	—	80.3	—	81.0	78.9	74.4	75.7	76.8	77.0	77.0	79.4	80.0	82.3	84.1	84.2	85.3	85.7	83.2	84.5	81.9	80.6	80.4	-0.2
Taking one or two drinks nearly every day	67.2	—	71.0	—	71.0	70.5	69.5	71.9	71.7	73.6	75.4	75.9	71.8	74.9	76.4	79.0	76.6	77.9	76.8	75.8	72.6	72.9	71.5	-1.4
Taking four or five drinks every day	89.2	—	88.1	—	88.5	87.9	86.4	86.6	86.0	86.1	88.2	87.4	85.6	87.1	87.2	88.2	86.4	87.4	87.2	85.2	84.1	82.6	82.5	-0.1
Having five or more drinks once or twice every weekend	55.0	—	53.4	—	51.3	50.6	50.3	51.2	50.6	51.3	55.9	54.9	52.4	54.0	56.4	59.0	58.1	60.8	58.5	59.1	58.0	57.8	56.4	-1.4
Smoking one or more packs of cigarettes per day	63.6	—	68.3	—	73.4	74.4	73.8	70.3	72.2	73.9	73.7	76.2	74.2	76.4	74.4	75.3	74.0	76.2	71.8	72.4	69.2	69.3	68.5	-0.8
Approx. N =	*2488*	—	*2615*	—	*2716*	*2766*	*3120*	*3024*	*2722*	*2721*	*2688*	*2639*	*2815*	*2778*	*2400*	*2184*	*2160*	*2229*	*2220*	*2149*	*2177*	*2030*	*2095*	

NOTES: Level of significance of difference between the two most recent classes: s = .05, ss = .01, sss = .001. '—' indicates data not available.
SOURCE: The Monitoring the Future Study, the University of Michigan.

[a] Answer alternatives were: (1) Don't disapprove, (2) Disapprove, and (3) Strongly disapprove. Percentages are shown for categories (2) and (3) combined.
[b] These numbers have been adjusted to correct for a lack of comparability of question context among administrations. (See text for discussion.)

- Also likely to be perceived as rating high parental disapproval (91-93% disapproval) were ***occasional marijuana*** use, taking ***one or two drinks*** nearly every day, and ***smoking a pack or more of cigarettes daily***.

- A slightly lower proportion of seniors (85%) felt their parents would disapprove of their having ***five or more drinks once or twice every weekend***. This was the same percentage that said their parents would disapprove of simply experimenting with marijuana, showing a considerably more tolerant parental attitude toward alcohol than marijuana use.

Perceptions of Friends' Attitudes

- Since the beginning of the study, a parallel set of questions has asked respondents to estimate their friends' attitudes about drug use (Table 9-1). These questions ask, "How do you think your close friends feel (or would feel) about you [taking the specified drug at the specified level]?" Peer disapproval, in 1997, for experimenting with a drug was highest for trying ***crack*** (92%), ***cocaine powder*** (91%), ***amphetamines*** (80%), and ***LSD*** (79%). Presumably, if ***heroin*** or ***PCP*** were on the list, they too would receive very high peer disapproval.

- Even experimenting with ***marijuana*** is viewed with disapproval by most seniors' friends (53%); and a large majority think their friends would disapprove if they smoked marijuana regularly (74%).

- Slightly more than two-thirds of all seniors think they would face peer disapproval if they smoked a ***pack or more of cigarettes daily*** (69%).

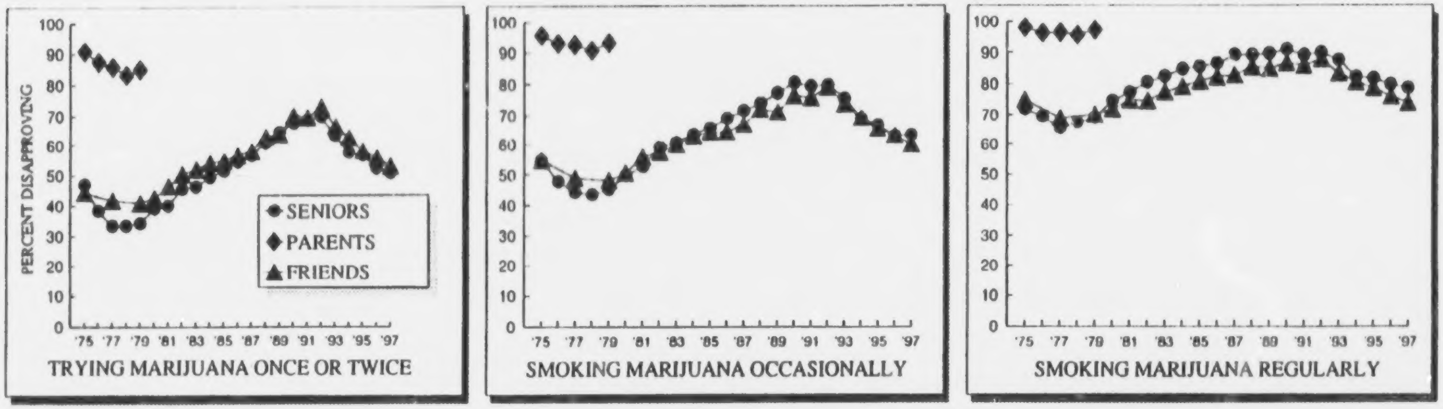
- While ***heavy drinking on weekends*** was judged by more than half (56%) to be disapproved of by their friends (many of whom exhibit that behavior themselves), substantially more (72%) think consumption of ***one or two drinks daily*** would be disapproved of, and the great majority (83%) would face the disapproval of their friends if they engaged in ***heavy daily drinking***.

- In sum, peer norms among twelfth-grade students differ considerably for the various drugs and for varying degrees of involvement with those drugs, but overall they tend to be quite conservative. The great majority of seniors have friendship circles that do not condone the use of illicit drugs other than marijuana, and about half (53%) of them believe their friends would disapprove of their even trying marijuana.

FIGURE 9-1a

Trends in Disapproval of Illicit Drug Use

Twelfth Graders, Parents, and Peers



TRYING MARIJUANA ONCE OR TWICE

SMOKING MARIJUANA OCCASIONALLY

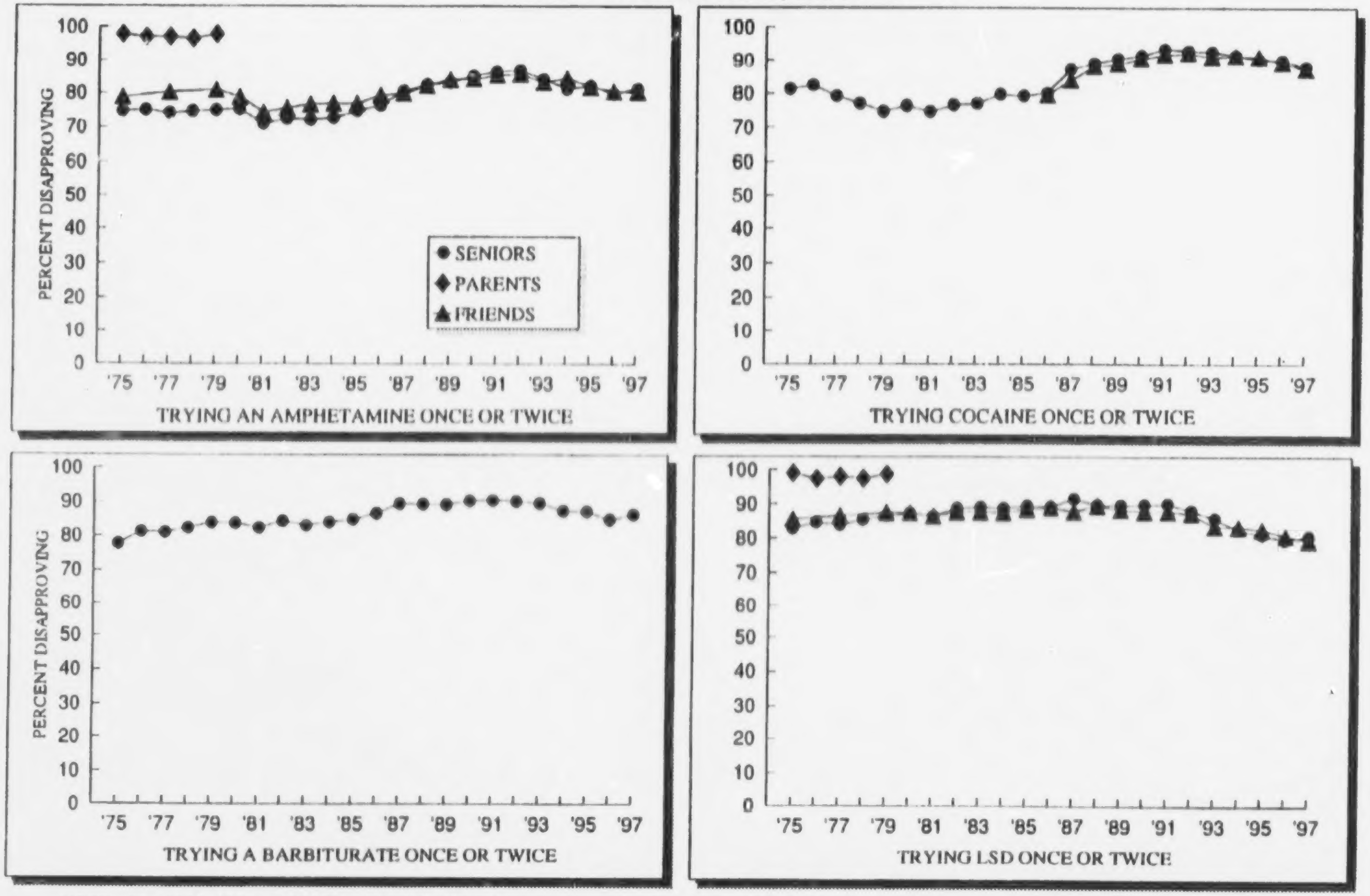
SMOKING MARIJUANA REGULARLY

NOTE: The 1975, 1977, and 1979 points indicating the percentage of seniors who said their friends would disapprove have been adjusted to compensate for lack of comparability of question-context between administration years. (See text for discussion.)

FIGURE 9-1b

Trends in Disapproval of Illicit Drug Use

Twelfth Graders, Parents, and Peers



NOTE: The 1975, 1977, and 1979 points indicating the percentage of seniors who said their friends would disapprove have been adjusted to compensate for lack of comparability of question-context between administration years. (See text for discussion.)

- Although we did not have the space to include these questions in the eighth- and tenth-grade questionnaires, there seems little doubt that they would have reported at least as restrictive peer norms as the twelfth graders, and perhaps more restrictive ones, based on the cross-grade comparisons of personal disapproval given in Chapter 8.

A Comparison of the Attitudes of Parents, Peers, and Twelfth Graders

A comparison of seniors' perceptions of friends' disapproval with seniors' perceptions of parents' disapproval, in the years for which comparison was possible (1975-1979), showed several interesting findings.

- First, there was rather little variability from year to year in students' perceptions of their parents' attitudes. Nearly *all* high school seniors said their parents would disapprove of any of the drug behaviors listed. Nor was there much variability among the different drugs in perceived parental attitudes. However, *peer* norms varied much more from drug to drug. From these facts, we may conclude that peer norms have a much greater chance of explaining variability in the respondents' own individual attitudes or use than parental norms, simply because peer norms vary more. We wish to emphasize that this is quite different than saying that parental attitudes do not matter, or even that they matter less than peer attitudes.

- Despite less variability in parental attitudes, the *ordering* for disapproval of drug use behaviors was much the same as for peers. That is, among the illicit drugs asked about, the highest frequencies of perceived disapproval were for trying cocaine, while the lowest frequencies were for trying marijuana.

- A comparison with the seniors' own attitudes regarding drug use reveals that, on the average, they are much more in accord with their peers than with their parents (see Figures 9-1a, 9-1b, and 9-2). The differences between seniors' own disapproval ratings in 1979 and those attributed to their parents tended to be large, with parents seen as more conservative overall in relation to ***every drug***, licit or illicit. The largest difference occurred in the case of ***marijuana*** experimentation, which only 34% of seniors in 1979 said they disapproved of vs. 85% who said their parents would disapprove. Although seniors' own disapproval rate of experimenting with marijuana has risen considerably, to 51% in 1997, it is likely that the greatest disparity would still remain between students' own attitudes and those of their parents on the issue of such marijuana use.

Trends in Perceptions of Parents' and Friends' Attitudes

A number of important changes in twelfth graders' perceptions of their peers' attitudes have taken place. These shifts are presented graphically in Figures 9-1a, 9-1b, and 9-2. Adjusted trend lines have been used for data collected before 1980. We discovered that the deletion in 1980 of the parental attitude questions, which were located immediately preceding the questions about friends' attitudes, removed what we judged to be an artifactual depression of the ratings of friends' attitudes, a phenomenon known as a question-context effect. This effect was particularly evident in the trend lines dealing with alcohol use, where otherwise smooth trend lines showed abrupt upward shifts in 1980. It appears that when questions about parents' attitudes were present, respondents tended to understate peer disapproval in order to emphasize the *difference* between their parents' attitudes and their peers' attitudes. In the adjusted lines, we have attempted to correct for that artifactual depression in the 1975, 1977, and 1979 scores.[47] We think the adjusted trend lines give a more accurate picture of the change that took place then. Note that the question-context effect seems to have had more influence on the questions dealing with cigarettes and alcohol than on those dealing with illicit drugs. Aside from this change, attributable to question context, a number of real and important changes have occurred.

- For each level of ***marijuana*** use—trying once or twice, occasional use, and regular use—there was a *drop* in perceived disapproval of both parents and friends through 1979. We know from our other findings that these perceptions of peers norms correctly reflected actual shifts in the individual attitudes of their peers—that is, disapproval of marijuana use was, in fact, decreasing among seniors (see Figures 9-1a and 9-2b). There is little reason to suppose such perceptions were less accurate in reflecting shifts in* parents' attitudes. Therefore, we conclude that the social norms regarding marijuana use among adolescents and adults had been relaxing before 1979. However, consistent with the seniors' reports about their own attitudes, there was a sharp reversal in peer norms, and peer disapproval of marijuana use continued to increase for more than a decade, through 1992. In 1993 another sharp reversal occurred, with the percentage of seniors saying that their friends would disapprove dropping from 4 to 7 percentage points, depending on the level of use (i.e., once or twice, occasionally, or regularly). Perceived peer disapproval dropped another 9 to 14 percentage points by 1997.

- From 1975 through 1980, relatively little change in either self-reported attitudes or perceived peer attitudes toward trying ***amphetamines*** once or twice occurred; then, in 1981, both measures showed significant and parallel dips in disapproval, and at the same time use rose sharply. After

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[47] The correction evolved as follows: we assumed that a more accurate estimate of the true change between 1979 and 1980 could be obtained by taking an average of the changes observed in the year prior and the year subsequent, rather than by taking the observed change (which we knew to contain the effect of a change in question context). We thus calculated an *adjusted* 1979-1980 change score by taking an average of one-half the 1977-1979 change score (our best estimate of the 1978-1979 change) plus the 1980-1981 change score. This estimated change score was then subtracted from the observed change score for 1979-1980, the difference being our estimate of the amount by which peer disapproval of the behavior in question was being understated because of the context in which the questions occurred prior to 1980. The 1975, 1977, and 1979 observations were then adjusted upward by the amount of that correction factor.

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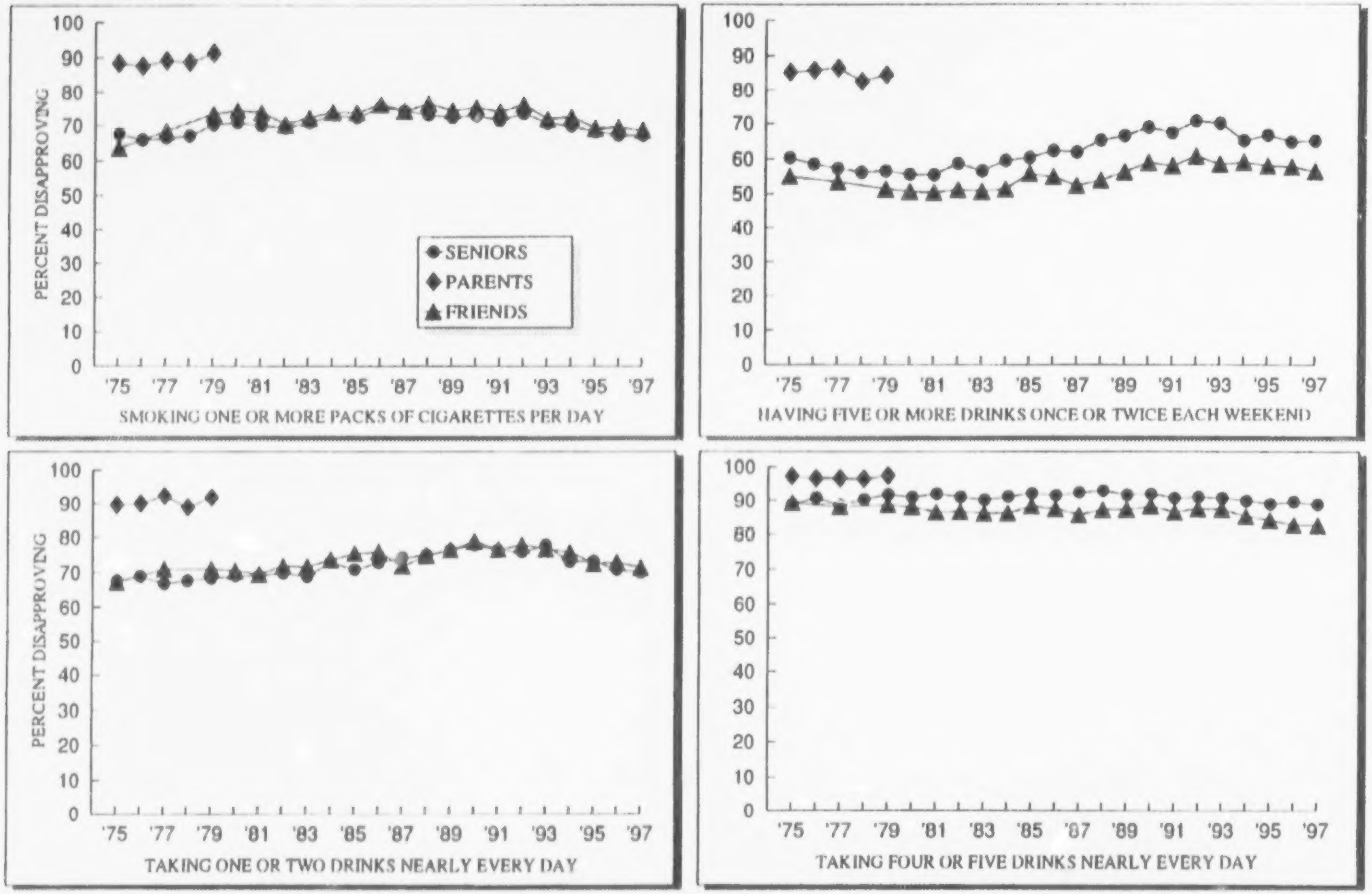
FIGURE 9-2

Trends in Disapproval of Licit Drug Use

Twelfth Graders, Parents, and Peers



NOTE: The 1975, 1977, and 1979 points indicating the percentage of seniors who said their friends would disapprove have been adjusted to compensate for lack of comparability of question-context between administration years. (See text for discussion.)

1981 disapproval rose, as use declined. Between 1992 and 1996, both friends' disapproval and personal disapproval of experimental use decreased significantly, as use increased slightly. Both leveled in 1997.

- Peer disapproval of ***LSD*** use, which had been high and relatively stable for some years, decreased steadily between 1988 and 1997, as use increased significantly. In 1997, peer disapproval decreased slightly (not significantly).

- While perceived attitudes of friends were not asked about ***barbiturate*** use, it seems likely that such perceptions moved in parallel to the seniors' own attitudes, since such parallel movement has been observed for the use of virtually all other drugs (see Figures 9-1a and 9-1b).

- Seniors' own disapproval of experimental ***cocaine*** use dropped between 1975 and 1979, as use increased, and then it rose very gradually through 1991. Questions on friends' attitudes about cocaine use were added to the study in 1986. Between 1986 and 1992, a sharp increase in peer disapproval of experimental or occasional cocaine use was observed, with the proportion saying that their close friends would disapprove of their experimenting with cocaine rising from 80% in 1986 to 92% in 1992. This corresponds to the period in which an even larger increase in perceived risk occurred, and we hypothesize that the change in the perceived dangers of a drug contribute to changes in the acceptability of using that drug.[48] From 1993 through 1995, perceived friends' disapproval stabilized, followed by some decrease in 1996 and 1997.

- With regard to ***regular cigarette smoking***, the proportion of seniors saying that their friends would disapprove of them daily smoking a pack or more rose from 64% (adjusted) in 1975 to 74% in 1980. Through the next 12 years, perceived peer disapproval fluctuated by only a few percentage points and then dropped significantly between 1992 and 1995, from 76% to 69%, where it has remained since.

- For alcohol, the perceived peer norms for ***weekend binge drinking*** generally moved in parallel with seniors' statements about their own personal disapproval: a slight decline in disapproval occurred in the mid-1970s and early 1980s, followed by a period of gradual increase between 1983 and 1992. Some divergence occurred when seniors' reported their own attitudes becoming less tolerant while perceived peer norms changed more slowly, suggesting some "collective ignorance" of the extent to which peers disapproved of this activity. Both measures declined some between 1992 and 1994, again with self-reported attitudes moving faster, this time reducing the gap between them. In 1997, friends' disapproval continued to decline while the senior's own disapproval rose slightly.

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[48] Johnston, L.D. (1991) Toward a theory of drug epidemics. In R.L. Donohew, H. Sypher, & W. Bukoski (Eds.), *Persuasive communication and drug abuse prevention* (pp. 93-132). Hillsdale, N.J.: Lawrence Erlbaum.

- ***Heavy daily drinking*** is seen by the great majority of seniors (83% in 1997) as disapproved of by their peers. Little systematic change has occurred over almost two decades (from 1975-1993), followed by a slight decline since 1993. Taking ***one or two drinks nearly every day*** saw some growth in peer disapproval between 1981 and 1990, but it has shown a gradual decline since then.

FRIENDS' USE OF DRUGS

It is generally acknowledged that much youthful drug use is initiated through a peer social-learning process, and research has shown a high correlation between an individual's illicit drug use and that of his or her friends. Such a correlation can, and probably does, reflect several different causal patterns: (a) a person with friends who use a drug will be more likely to try the drug; (b) conversely, the individual who is already using a drug will be more likely to introduce friends to the experience; and (c) users are more likely to establish friendships with other users.

Given the potential importance of exposure to drug use by others, we thought it useful to monitor students' association with others taking drugs, as well as their perceptions about the extent to which their friends use drugs. Two sets of questions, each in a different questionnaire form and each covering all or nearly all of the categories of drug use treated in this report, ask seniors to indicate for each drug (a) how often during the past 12 months they were around people taking it to get high or for "kicks" and (b) what proportion of their own friends use it. (The data dealing with direct exposure to use may be found in Table 9-2. The questions dealing with friends' use are shown in Table 9-3.) Responses to these two questions are highly correlated with the respondents' own drug use; thus, for example, seniors who have recently used marijuana are much more likely to report that they have been around others getting high on marijuana and that most of their friends use it. The questions on proportions of friends using the various drugs were included in the questionnaires used for eighth and tenth graders, and the results for those age groups will be discussed in a separate section below.

Exposure to Drug Use by Friends and Others: Twelfth Graders

- A comparison of the aggregated responses about friends' use and about being around people in the last 12 months who were using various drugs to get high reveals a high degree of correspondence between these two indicators of exposure, even though these two questions appear in separate forms of the questionnaire. For each drug, the proportion of respondents saying "none" of their friends use it is fairly close to the proportion who say that during the last 12 months they have not been around anyone who was using that drug to get high. Similarly, the proportion reporting that "most" or "all" of their friends use a given drug is roughly the same as the proportion saying they have "often" been around people getting high on that drug.

TABLE 9-2

Trends in Twelfth Graders' Exposure to Drug Use

(Entries are percentages)

Q. During the LAST 12 MONTHS how often have you been around people who were taking each of the following to get high or for "kicks"?	Class of 1975	Class of 1976	Class of 1977	Class of 1978	Class of 1979	Class of 1980	Class of 1981	Class of 1982	Class of 1983	Class of 1984	Class of 1985	Class of 1986	Class of 1987	Class of 1988	Class of 1989	Class of 1990	Class of 1991	Class of 1992	Class of 1993	Class of 1994	Class of 1995	Class of 1996	Class of 1997	'96–'97 change
Any illicit drug*																								
% saying not at all	—	17.4	16.5	15.1	15.0	15.7	17.3	18.6	20.6	22.1	22.3	24.5	26.1	28.7	31.4	32.4	35.8	38.7	33.9	29.2	24.7	22.0	21.2	-0.8
% saying often	—	34.8	39.0	40.7	40.4	36.3	36.1	31.4	29.8	28.3	27.2	26.3	23.3	20.8	22.0	20.7	18.2	18.0	24.0	29.3	32.3	33.8	34.7	+0.9
Any illicit drug* except marijuana																								
% saying not at all	—	44.9	44.2	44.7	41.7	41.5	37.4	37.5	40.6	40.2	40.7	44.7	48.3	52.2	52.9	54.6	60.0	58.4	57.4	54.7	52.8	50.3	52.1	+1.8
% saying often	—	11.8	13.5	12.1	13.7	14.1	17.1	16.6	14.2	14.6	12.9	12.1	10.2	9.6	10.7	9.2	7.9	7.5	9.6	9.4	11.1	12.1	11.7	-0.4
Marijuana																								
% saying not at all	—	20.5	19.0	17.3	17.0	18.0	19.8	22.1	23.8	25.6	26.5	28.0	29.6	33.0	35.2	36.6	40.4	43.2	39.0	32.8	27.3	24.4	23.2	-1.2
% saying often	—	32.5	37.0	39.0	38.9	33.8	33.1	28.0	26.1	24.8	24.2	24.0	20.6	17.9	19.5	17.8	16.0	15.6	20.9	27.6	30.7	31.8	32.9	+1.1
LSD																								
% saying not at all	—	78.8	80.0	81.9	81.9	82.8	82.6	83.9	86.2	87.5	86.8	86.9	87.1	86.6	85.0	85.1	84.3	82.2	79.0	75.8	73.9	72.4	74.1	+1.7
% saying often	—	2.2	2.0	1.8	2.0	1.4	2.0	1.9	1.4	1.5	1.3	1.6	1.8	1.6	2.2	2.6	2.9	3.0	3.9	4.2	6.1	4.7	5.1	+0.4
Other Psychedelics																								
% saying not at all	—	76.5	76.7	76.7	77.6	79.6	82.4	83.2	86.9	87.3	87.5	88.2	90.0	91.0	91.2	90.6	90.6	90.3	87.9	86.0	84.2	83.4	82.2	-1.2
% saying often	—	3.1	3.2	2.9	2.2	2.2	2.0	2.6	1.1	1.7	1.4	1.5	1.2	1.1	1.3	1.2	1.3	1.1	1.9	2.3	2.5	2.7	2.8	+0.1
Cocaine																								
% saying not at all	—	77.0	73.4	69.8	64.0	62.3	63.7	65.1	66.7	64.4	61.7	62.6	65.1	69.8	69.8	72.3	78.7	80.2	80.8	81.2	78.4	75.0	74.4	-0.6
% saying often	—	3.0	3.7	4.6	6.8	5.9	6.6	6.6	5.2	6.7	7.1	7.8	5.9	5.1	5.4	4.7	3.4	2.7	2.9	2.5	3.2	4.0	4.2	+0.2
Heroin																								
% saying not at all		91.4	90.3	91.8	92.4	92.6	93.4	92.9	94.9	94.0	94.5	94.0	94.2	94.3	93.5	94.6	94.9	94.6	94.3	92.7	92.1	91.4	90.9	-0.5
% saying often		0.8	1.1	0.9	0.7	0.4	0.6	1.0	0.7	1.1	0.5	1.0	0.9	0.8	1.0	0.5	0.9	0.7	1.1	0.7	1.2	1.6	1.2	-0.4
Other Narcotics																								
% saying not at all	—	81.9	81.3	81.8	82.0	80.4	82.5	81.5	82.7	82.0	81.6	84.4	85.6	85.2	86.2	85.8	88.7	88.9	87.6	85.1	84.5	81.5	79.6	-1.9
% saying often	—	1.8	2.4	2.0	1.7	1.7	1.7	2.4	2.2	2.0	1.8	2.1	1.7	1.7	1.7	1.6	1.4	1.3	1.7	1.7	2.1	3.4	2.5	-0.9
Amphetamines																								
% saying not at all	—	59.6	60.3	60.9	58.1	59.2	50.5	49.8	53.9	55.0	59.0	63.5	68.3	72.1	72.6	71.7	76.4	75.5	75.3	71.8	71.9	68.5	69.0	+0.5
% saying often	—	6.8	7.9	6.7	7.4	8.3	12.1	12.3	10.1	9.0	6.5	5.8	4.5	4.1	4.7	4.1	3.1	3.0	3.9	4.1	4.5	5.6	5.2	-0.4
Barbiturates																								
% saying not at all	—	69.0	70.0	73.5	73.6	74.8	74.1	74.3	77.5	78.8	81.1	84.2	86.9	87.6	88.2	86.7	90.0	89.8	88.1	87.0	85.5	84.5	83.9	-0.6
% saying often		4.5	5.0	3.4	3.3	3.4	4.0	4.3	3.0	2.7	1.7	2.1	1.5	1.4	1.7	1.7	1.2	1.1	1.6	1.7	2.0	2.9	2.5	-0.4
Tranquilizers																								
% saying not at all		67.7	66.0	67.5	67.5	70.9	71.0	73.4	76.5	76.9	76.6	80.4	81.6	81.8	84.9	83.7	85.8	87.3	86.2	83.5	84.3	82.1	81.1	-1.0
% saying often	—	5.5	6.3	4.9	4.3	3.2	4.2	3.5	2.9	2.9	2.2	2.5	2.6	2.2	2.1	1.9	1.4	1.9	1.7	1.8	2.3	3.5	3.2	-0.3
Alcoholic beverages																								
% saying not at all	—	6.0	5.6	5.5	5.2	5.3	6.0	6.0	6.0	6.0	6.0	5.9	6.1	6.9	7.7	6.4	8.3	9.4	8.2	10.0	8.8	8.5	8.6	+0.1
% saying often	—	57.1	60.8	60.8	61.2	60.2	61.0	59.3	60.2	58.7	59.5	58.0	58.7	56.4	55.5	56.1	54.5	53.1	51.9	54.0	54.0	54.5	53.9	-0.6
Approx. N =		*2950*	*3075*	*3682*	*3253*	*3259*	*3608*	*3645*	*3334*	*3238*	*3252*	*3078*	*3296*	*3300*	*2795*	*2556*	*2525*	*2630*	*2730*	*2581*	*2608*	*2407*	*2595*	

NOTES: Level of significance of difference between the two most recent classes: s = .05, ss = .01, sss = .001. '—' indicates data not available.
SOURCE: The Monitoring the Future Study, the University of Michigan.

*These estimates were derived from responses to the questions listed. "Any illicit drug" includes all drugs listed except alcohol.

- As would be expected, reports of exposure and friends' use closely parallel the figures on seniors' own use (compare Figures 4-1 and 9-4). It is no surprise that the highest levels of exposure involved ***alcohol***; a majority (54%) said they have "often" been around people using it to get high. What may come as a surprise is that 31% of all seniors said that most or all of their friends ***get drunk*** at least once a week. (This is consistent, however, with the fact that 31% said they personally had taken five or more drinks in a row at least once during the prior two weeks.)

- After alcohol, students are exposed next most frequently to ***marijuana***. Over three-quarters of the twelfth graders (77%) reported some exposure to marijuana during the prior year. Some 33% said they have "often" been around people using it to get high, and another 23% said they have been exposed "occasionally." Nearly a quarter (23%) said that most or all of their friends smoke marijuana.

- ***Amphetamines*** rank next in exposure: 31% of seniors reported some exposure to use in the prior year, and 33% said they have friends who use them.

- Among all seniors, 26% have been around someone using ***LSD*** to get high over the past year, and over one-third (37%) said they have friends who use it.

- For the remaining illicit drugs, any exposure to use in the past year ranges from 26% for ***cocaine*** down to 9% for ***heroin***.

- A majority of seniors (52%) reported no exposure to ***illicit drugs other than marijuana*** during the prior year, and one-fifth (21%) reported no exposure to ***any illicit drug*** during the prior year. Thus, exposure to ***marijuana*** use, at least, is still widespread (at 77%), but exposure to the use of ***drugs other than marijuana*** occurred for only 48%.

- Only one in every three seniors (34%) reported that most or all of their friends smoke ***cigarettes***, but 90% have at least some friends who smoke.

Friends' Use of Drugs: Eighth and Tenth Graders

While the questions about exposure to use were not included in the questionnaires for eighth graders and tenth graders, the questions regarding the proportion of their friends who use each drug were.

- As would be expected, eighth- and tenth-grade students are considerably less likely to have friends who use the various drugs than are twelfth graders (Table 9-3). For example, for ***cocaine powder***, ***crack***, and ***heroin***, fewer than 20% of the eighth graders and fewer than 23% of the tenth graders have any friends who use each drug.

TABLE 9-3

Trends in Friends' Use of Drugs as Estimated by Eighth, Tenth, and Twelfth Graders, 1991-97

(Entries are percentages)

Q. How many of your friends would you estimate	8th Grade								10th Grade								12th Grade							
	1991	1992	1993	1994	1995	1996	1997	'96–'97 change	1991	1992	1993	1994	1995	1996	1997	'96–'97 change	1991	1992	1993	1994	1995	1996	1997	'96–'97 change
Smoke marijuana																								
% saying none	78.1	74.9	69.2	58.9	53.9	49.2	49.2	0.0	51.7	54.1	47.3	36.6	31.5	26.5	26.6	+0.1	34.2	36.9	32.6	24.4	23.9	22.0	18.6	-3.4s
% saying most or all	3.3	4.1	6.0	10.5	12.7	15.2	13.8	-1.4s	7.9	8.0	11.2	18.0	21.3	26.4	25.0	-1.4	10.0	10.3	13.9	18.9	20.7	22.2	22.5	+0.3
Use inhalants																								
% saying none	79.5	76.9	73.7	70.8	67.9	67.7	67.1	-0.6	82.7	82.2	78.9	76.4	74.7	74.3	76.3	+2.0s	80.8	77.8	76.3	73.5	72.5	72.8	72.6	-0.2
% saying most or all	2.4	2.9	3.7	4.2	5.0	5.2	4.8	-0.4	1.4	1.5	1.8	2.0	2.1	2.2	2.2	0.0	0.7	1.8	1.8	2.0	2.0	2.4	1.9	-0.5
Take crack																								
% saying none	91.4	89.1	87.5	84.8	82.3	81.5	80.7	-0.8	86.8	86.8	84.9	82.7	80.2	78.6	78.0	-0.6	82.4	82.2	82.1	80.0	80.8	78.4	77.8	-0.6
% saying most or all	0.9	1.0	1.3	1.6	1.6	2.0	1.8	-0.2	0.8	0.7	0.9	1.0	1.2	1.2	1.5	+0.3	0.6	0.7	0.9	1.0	1.1	0.9	1.1	+0.2
Take cocaine powder																								
% saying none	91.6	89.3	87.9	85.7	83.8	82.6	82.4	-0.2	85.3	85.9	84.6	82.7	80.3	78.3	77.5	-0.8	80.2	80.3	81.9	79.3	80.8	77.2	75.2	-2.0
% saying most or all	0.9	1.1	1.3	1.7	1.6	1.7	1.6	-0.1	0.8	0.8	0.8	1.1	1.3	1.4	1.7	+0.3	1.8	2.0	1.6	1.9	1.7	1.9	2.0	+0.1
Take heroin																								
% saying none	93.9	92.7	91.1	89.7	88.4	88.0	87.8	-0.2	92.2	91.9	90.7	89.5	88.9	88.3	88.2	-0.1	88.6	86.8	86.7	85.7	85.5	84.4	84.4	0.0
% saying most or all	0.7	0.9	0.9	1.3	1.3	1.4	1.2	-0.2	0.6	0.6	0.7	0.6	0.8	0.7	0.9	+0.2	0.4	0.7	1.1	1.0	1.1	0.9	0.8	-0.1
Drink alcoholic beverages																								
% saying none	27.9	23.6	24.3	23.0	24.1	22.9	24.2	+1.3	7.1	8.7	8.2	7.2	7.8	7.6	7.8	+0.2	8.8	9.5	11.1	9.9	9.1	10.4	9.3	-1.1
% saying most or all	21.0	23.7	25.5	27.4	27.5	28.8	25.9	-2.9s	49.6	48.2	49.9	50.3	50.7	53.4	50.7	-2.7s	58.6	56.9	57.0	59.6	66.4	56.4	60.9	+4.5s
Get drunk at least once a week																								
% saying none	57.2	52.0	52.0	49.7	51.3	48.8	51.7	+2.9	24.9	27.4	25.5	23.1	24.7	23.3	23.8	+0.5	20.2	20.1	20.8	18.6	21.1	21.5	17.6	-3.9ss
% saying most or all	7.2	8.4	9.0	10.6	9.9	10.9	9.3	-1.6s	19.3	18.6	20.2	20.3	20.6	23.1	21.8	-1.3	29.7	28.6	27.6	28.4	27.4	29.0	30.9	+1.9
Smoke cigarettes																								
% saying none	32.3	27.6	26.2	23.9	23.9	21.9	23.1	+1.2	18.8	18.0	14.6	13.7	12.0	10.7	11.9	+1.2	14.3	15.6	15.2	11.9	12.1	11.7	10.1	-1.6
% saying most or all	11.8	14.4	16.7	19.0	20.5	22.5	19.7	-2.8s	18.2	18.7	22.8	24.7	27.8	32.8	29.3	-3.5ss	21.8	21.4	25.0	25.3	27.5	30.4	34.4	+4.0s
Use smokeless tobacco																								
% saying none	63.5	62.5	62.7	61.4	62.2	62.1	65.5	+3.4s	46.9	46.9	42.5	41.6	42.1	45.0	48.0	+3.0	—	—	—	—	—	—	—	—
% saying most or all	3.8	4.2	3.8	4.8	4.7	5.1	3.5	-1.6ss	7.5	7.3	7.7	7.6	7.3	6.0	6.4	+0.4	—	—	—	—	—	—	—	—
Approx. N=	*15975*	*16606*	*16536*	*15791*	*15271*	*16073*	*16108*		*14258*	*14008*	*14572*	*15039*	*16130*	*14780*	*14724*		*2339*	*2373*	*2410*	*2337*	*2379*	*2156*	*2292*	

NOTES: Level of significance of difference between the two years. s =.05, ss =.01, sss =.001. '—' indicates data not available.
SOURCE: The Monitoring the Future Study, the University of Michigan.

- For ***marijuana***, however, half (51%) of the eighth graders and nearly three-quarters (73%) of the tenth graders said they have friends who use it.

- Among eighth graders, 33% said they have friends who use ***inhalants*** vs. 24% of the tenth graders.

- Exposure to ***alcohol*** use through friends is much more widespread. Three-quarters (76%) of the eighth graders and 92% of the tenth graders reported having friends who use alcohol. In fact, one-fourth (26%) of the eighth graders and one-half (51%) of the tenth graders said that most or all of their friends drink, and the proportions saying that most or all of their friends ***get drunk*** at least once a week is almost one in ten (9%) in eighth grade and more than one in five (22%) in tenth grade.

- Exposure to ***cigarette smoking*** through friends also is very high for these children, with more than three-quarters (77%) of the eighth graders and 88% of the tenth graders saying they have some friends who smoke.

- More than a third of the eighth graders (35%) and more than half of the tenth graders (52%) have friends who use ***smokeless tobacco***.

TRENDS IN FRIENDS' USE OF DRUGS

Trends in Exposure to Drug Use by Friends and Others: Twelfth Graders

- Between 1976 and 1978, seniors' reports of exposure to ***marijuana*** use increased in about the same proportion as did actual self-reported monthly use. Both exposure to use and actual use stabilized in 1979, and then both dropped steadily so that the proportion saying they were "often" around people using marijuana decreased by more than half between 1979 and 1992 (from 39% to 16%). After 1992, however, there were significant *increases* in such exposure, reaching 33% in 1997, paralleling the significant rise in self-reported use.

- The proportion of seniors exposed to ***cocaine*** users showed a consistent increase from 1976 to 1979, as self-reported use also rose. Between 1979 and 1984, there was little change in exposure to use, coinciding with a period of stability in self-reported use. Then, in 1985 and 1986, there was an increase in reported exposure to use; these were the peak years in self-reported use. After 1986, seniors' exposure to cocaine use dropped steadily, and the proportion saying they had any friends who used cocaine dropped from 46% in 1986 to 25% in 1993 (Table 9-4). In fact, this statistic dropped 13 percentage points in the four-year interval between 1989 and 1993. However, use rose slightly from 1994 to 1997, and exposure to use increased as well (Table 9-2).

- ***Inhalant*** use by friends showed some increase between 1983 and 1991, with the proportion who reported having any friends who use inhalants rising from 16% in 1983 to 19% in 1991. This statistic rose more sharply to 27% by 1997. (Exposure to inhalant use is not asked about.)

- The use of ***LSD*** fell slightly from 1975 to 1984 and then stabilized for about five years. Exposure to use through friends and others followed a similar course. From 1989 to 1997, usage rates rose some (annual prevalence went from 4.9% to 8.4%), as did exposure to use (which rose from 15% to 26%).

- From 1979 to 1989, there was a gradual decrease in exposure to the use of ***psychedelics other than LSD***, coinciding with a continued decline in the self-reported use of this class of drugs. Between 1988 and 1992, friends' use remained fairly stable, followed by increases each year from 1993 to 1996 and no change in 1997. Exposure increased from 1992 through 1997, as did self-reported use.

- Both exposure to ***tranquilizer*** use and self-reported use declined gradually between 1976 and 1994, when use stabilized and reported exposure rose significantly. Exposure increased slightly in 1997.

- There was also a gradual decrease in exposure to the use of ***barbiturates*** from 1976 through 1980, followed by a leveling for two years and then further declines in exposure between 1983 (when 23% reported some exposure) and 1992 (when 10% did). The exposure rate has increased slightly since 1992 (to 16% in 1997). These changes closely parallel those in self-reported use.

- Trend data on friends' use of ***PCP*** and ***nitrites*** are available from 1979 onward. For nitrites, friends' use has closely paralleled self-reported use, with a substantial decline between 1979 and 1992, followed by a slight increase through 1996 and then a leveling. Similarly, for PCP, both measures showed a substantial decline between 1979 and 1990 or 1991, followed by some increase through 1996 and then a leveling.

- The proportion having any friends who used ***amphetamines*** rose from 41% to 51% between 1979 and 1982, paralleling the sharp increase in self-reported use over that period. The proportion saying they were around people using amphetamines "to get high or for kicks" also jumped substantially between 1980 and 1982 (by 9 percentage points).[49] It then fell continually, a full 26 percentage points, between 1982 and 1992 (to 25%) as self-reported use declined substantially. Since 1992, both self-reported use and exposure to use have increased.

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[49] This finding was important, since it indicated that a substantial part of the increase observed in self-reported amphetamine use was due to things other than simply an increase in the use of over-the-counter diet pills or stay-awake pills, which presumably are not used to get high. Obviously, more young people were using stimulants for recreational purposes. Of course, the question of whether the active ingredients in those stimulants really were amphetamines still remains.

- Between 1978 and 1981, ***methaqualone*** use rose, as did the proportion of seniors saying some of their friends use it. A decline in both seniors' use and friends' use started around 1982, and by 1991 the proportion of seniors saying they had any friends who use quaaludes fell by nearly two-thirds (down from 35% to 12% between 1981 and 1991). Seniors' usage rates showed an even larger proportional decline, but after 1991 exposure to use edged up, as self-reported use rose slightly. In 1997 both stabilized.

- Although we did not ask students about their own use of ***MDMA*** (ecstasy) until 1996, a sharp increase was reported in the proportion of seniors having at least some friends who are users between 1993 and 1997. This measure stayed fairly stable at 11% to 13% between 1990, when it was first measured, and 1993. By 1997, 28% said they have some friends who use MDMA.

- The proportion saying that most or all of their friends smoke ***cigarettes*** dropped steadily and substantially between 1976 and 1981, from 37% to 22%. During this period self-reported use dropped markedly, and more seniors perceived their friends as disapproving of regular smoking. Between 1982 and 1992, both friends' use and self-reported use remained relatively stable; in fact, in 1992 the friends' use rate was close to the 1981 rate. In 1977, the peak year for actual use, 34% said most or all of their friends smoked; in 1981, 22%, and in 1992, 21%. Since 1992 there has been a significant increase in the proportion who said most or all of their friends smoke cigarettes, up to 34% in 1997, and self-reported smoking also has increased significantly during this period.

- The proportion saying most or all of their friends ***get drunk*** at least once a week increased between 1976 and 1979, from 27% to 32%; during the same period the prevalence of self-reported, occasional heavy drinking rose by about the same amount. There was little change in either measure for about five years. Beginning in 1984 and 1985, self-reports by seniors of their own heavy drinking began to decline, but reported heavy drinking by friends has shown a more recent and modest decline. The most impressive fact here is that nearly one-third of all high school seniors (31% in 1997) said that most or all of their friends get drunk at least once a week, which is the same proportion that said they personally have been binge drinking in the past two weeks (31%). Fewer than one in five (18%) said that none of their friends get drunk that often.

Implications for Validity of Self-Reported Usage Questions

We have noted a high degree of correspondence in the aggregate level data presented in this report among seniors' self-reports of their *own* drug use, their reports concerning *friends'* use, and their own *exposure* to such use. Drug-to-drug comparisons in any given year across these three types of measures tend to be highly parallel, as are the changes from year to year.[50] We take this consistency as additional evidence of the validity of the self-report data, and of trends in the self-report data, since there should be less reason to distort answers on use by unidentified friends, or general exposure to use, than to distort reporting one's own use. Figure 9-3 illustrates the degree of cross-time correspondence between the proportion of seniors saying they personally used marijuana in the 30 days prior to the survey and those saying most or all of their friends use marijuana.

Trends in Friends' Use: Eighth and Tenth Graders

Trend data for grades 8 and 10 have been available since 1991 (Table 9-4). In general, they show trends that are highly consistent with the trends in self-reported use at these grade levels. These questions are asked of all eighth- and tenth-grade respondents providing large sample sizes.

- In 1992, eighth graders showed increased self-reported use of a number of drugs (including ***marijuana***, ***inhalants***, ***cocaine powder***, and ***crack***) as well as increases in the proportions of their friends using them. In 1993, these trends continued among eighth graders, who were then joined by tenth and twelfth graders.

- For ***marijuana***, self-reported use increased very sharply in all grades between 1994 and 1996, a fact that was also reflected in reported use by friends. The proportions saying that some of their friends smoke marijuana rose by 10 percentage points among eighth graders, and by 11 percentage points among tenth graders in 1994 (Table 9-3). In 1995 and 1996, friends' use in both grades rose an additional 10 percentage points. Friends' use did not change between 1996 and 1997 although self-reported use dropped slightly. Tenth graders may have shown a decline in friends' use but have not yet reported a decline in self-reported use.

- In all three grades, the proportions saying that they have friends who use ***inhalants*** rose consistently from 1991 through 1996. Self-reported usage rates also rose over the same period. In 1997, inhalant use leveled or reversed in all three grades, as did reported friends' use.

- Among eighth and tenth graders, there were increases each year between 1993 and 1997 in the proportion of friends using ***crack, cocaine powder,*** and ***heroin*** (although not all reached significance each year). Self-reported use of these drugs also increased in those grades. The rates tended to stabilize in 1997, as we have seen for so many drugs.

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[50] Those minor instances of noncorrespondence may well result from the larger sampling errors in our estimates of these environmental variables, which are measured on a sample size one-fifth or one-sixth the size of the self-reported usage measures.

TABLE 9-4

Long-Term Trends in Proportion of Friends Using Drugs as Estimated by Twelfth Graders

(Entries are percentages)

Q. *How many of your friends would you estimate . . .*	Class of 1975	Class of 1976	Class of 1977	Class of 1978	Class of 1979	Class of 1980	Class of 1981	Class of 1982	Class of 1983	Class of 1984	Class of 1985	Class of 1986	Class of 1987	Class of 1988	Class of 1989	Class of 1990	Class of 1991	Class of 1992	Class of 1993	Class of 1994	Class of 1995	Class of 1996	Class of 1997	'96-'97 change
Take any illicit drug[a]																								
% saying none	14.2	15.4	13.1	12.5	11.0	12.5	14.6	13.7	17.4	19.0	17.6	17.8	18.3	20.9	23.1	29.0	30.9	32.7	29.0	21.7	21.4	19.4	16.6	-2.8
% saying most or all	31.9	31.7	33.2	36.3	37.0	32.5	29.8	26.5	23.8	20.9	22.7	21.5	18.6	15.8	15.7	11.6	11.7	12.0	15.5	20.3	21.7	23.8	23.7	-0.1
Take any illicit drug[a] **other than marijuana**																								
% saying none	33.3	44.5	42.5	43.6	38.7	37.6	36.7	35.3	38.8	38.7	38.2	36.7	37.6	43.5	43.8	49.9	53.7	52.9	51.3	46.3	46.3	45.5	44.9	-0.6
% saying most or all	10.6	8.9	7.7	8.5	10.4	11.1	11.9	10.9	11.0	10.3	10.4	10.3	9.2	6.9	7.7	5.1	4.6	5.3	7.1	7.1	7.7	8.9	7.0	-1.9
Smoke marijuana																								
% saying none	17.0	17.1	14.1	13.9	12.4	13.6	17.0	15.6	19.7	22.3	20.5	20.8	21.6	24.7	27.5	31.7	34.2	36.9	32.6	24.4	23.9	22.0	18.6	-3.4s
% saying most or all	30.3	30.6	32.3	35.3	35.5	31.3	27.7	23.8	21.7	18.3	19.8	18.2	15.8	13.6	13.4	10.1	10.0	10.3	13.9	18.9	20.7	22.2	22.5	+0.3
Use inhalants																								
% saying none	75.7	81.4	81.1	80.0	80.9	82.2	83.5	81.6	83.9	80.7	78.8	77.6	75.3	79.2	77.9	80.0	80.8	77.8	76.3	73.5	72.5	72.8	72.6	-0.2
% saying most or all	1.1	1.1	1.0	1.1	1.1	1.2	0.9	1.3	1.1	1.1	1.5	2.0	1.9	1.2	1.9	1.0	0.7	1.8	1.8	2.0	2.0	2.4	1.9	-0.5
Use nitrites																								
% saying none	—	—	—	—	78.4	81.0	82.6	82.5	85.5	85.0	84.4	82.0	81.7	86.4	86.7	89.6	91.1	91.0	89.3	90.0	89.3	88.8	88.1	-0.7
% saying most or all	—	—	—	—	1.9	1.3	1.2	0.9	0.7	1.2	1.0	1.2	1.3	0.7	0.9	0.6	0.4	0.7	0.7	0.8	0.8	0.8	0.7	-0.1
Take LSD																								
% saying none	63.5	69.4	68.1	70.1	71.1	71.9	71.5	72.2	76.0	76.1	75.6	75.5	74.7	75.9	74.8	75.0	76.6	71.9	68.7	65.9	63.1	62.1	63.5	+1.4
% saying most or all	2.7	2.8	3.0	2.0	1.9	1.8	2.2	2.4	1.4	2.0	1.5	1.8	1.6	1.5	2.4	1.9	1.7	2.4	3.8	4.2	4.8	5.0	3.7	-1.3
Take other psychedelics																								
% saying none	58.8	69.7	68.6	70.8	71.8	71.8	73.7	74.4	77.9	78.7	78.0	77.7	78.3	82.2	81.9	84.1	84.9	83.0	80.7	78.6	76.2	73.6	73.7	+0.1
% saying most or all	4.7	3.0	2.8	2.0	2.2	2.2	2.1	1.9	1.6	1.9	1.4	1.3	1.2	0.9	1.4	1.0	0.8	1.0	1.7	2.2	2.2	2.3	2.6	+0.3
Take PCP																								
% saying none	—	—	—	—	72.2	77.8	82.8	82.7	85.8	85.8	84.1	83.9	84.5	86.5	85.3	87.0	88.0	87.3	84.4	84.5	81.7	79.7	80.3	+0.6
% saying most or all	—	—	—	—	1.7	1.6	0.9	0.9	1.1	1.1	1.2	1.2	1.1	0.8	1.2	0.5	0.5	0.9	1.9	1.2	1.2	1.3	1.4	+0.1
Take MDMA (ecstasy)																								
% saying none	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	87.6	88.1	89.3	87.2	84.1	79.3	75.8	72.3	-3.5s
% saying most or all	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	2.2	1.7	2.1	1.2	1.7	2.8	3.0	2.6	-0.4
Take cocaine																								
% saying none	66.4	71.2	69.9	66.8	61.1	58.4	59.9	59.3	62.4	61.1	56.2	54.4	56.3	62.3	62.6	68.3	73.2	73.7	75.5	73.9	75.2	71.9	71.5	-0.4
% saying most or all	3.4	3.2	3.6	4.0	6.0	6.1	6.3	4.9	5.1	5.1	5.8	6.2	5.1	3.4	3.7	2.1	1.5	1.5	2.1	1.5	2.0	2.2	2.0	-0.2
Take crack																								
% saying none	—	—	—	—	—	—	—	—	—	—	—	—	72.6	74.6	73.9	80.8	82.4	82.2	82.1	80.0	80.8	78.4	77.8	-0.6
% saying most or all	—	—	—	—	—	—	—	—	—	—	—	—	2.2	1.1	2.1	0.6	0.6	0.7	0.9	1.0	1.1	0.9	1.1	+0.2
Take cocaine powder																								
% saying none	—	—	—	—	—	—	—	—	—	—	—	—	—	—	74.7	75.4	80.2	80.3	81.9	79.3	80.8	77.2	75.2	-2.0
% saying most or all	—	—	—	—	—	—	—	—	—	—	—	—	—	—	2.3	2.5	1.8	2.0	1.6	1.9	1.7	1.9	2.0	+0.1

SOURCE: The Monitoring the Future Study, the University of Michigan.

(Table continued on next page)

TABLE 9-4 (cont.)

Long-Term Trends in Proportion of Friends Using Drugs as Estimated by Twelfth Graders

(Entries are percentages)

Q *How many of your friends would you estimate* . . .	Class of 1975	Class of 1976	Class of 1977	Class of 1978	Class of 1979	Class of 1980	Class of 1981	Class of 1982	Class of 1983	Class of 1984	Class of 1985	Class of 1986	Class of 1987	Class of 1988	Class of 1989	Class of 1990	Class of 1991	Class of 1992	Class of 1993	Class of 1994	Class of 1995	Class of 1996	Class of 1997	'96-'97 change
Take heroin																								
% saying none	84.8	86.4	87.1	85.7	87.1	87.0	87.5	86.8	88.0	87.0	85.5	84.7	86.1	87.6	86.0	88.6	88.6	86.8	86.7	85.7	85.5	84.4	84.4	0.0
% saying most or all	0.7	0.8	0.7	0.9	0.5	1.0	0.5	0.7	0.8	0.8	0.9	1.1	0.9	0.7	1.1	0.4	0.4	0.7	1.1	1.0	1.1	0.9	0.8	-0.1
Take other narcotics																								
% saying none	71.2	75.9	76.3	76.8	76.9	77.6	76.9	76.1	79.2	78.6	77.2	78.2	76.8	80.8	80.8	82.8	86.3	85.1	83.9	81.5	80.5	78.2	77.8	-0.4
% saying most or all	2.1	2.2	1.7	1.4	1.5	1.7	1.5	1.4	1.4	1.6	1.4	1.8	1.4	1.2	1.4	0.9	0.5	1.1	1.2	1.0	1.6	1.5	1.4	-0.1
Take amphetamines																								
% saying none	49.0	57.8	58.7	59.3	59.3	56.1	51.2	49.4	53.9	54.9	56.7	58.2	60.5	66.6	66.5	71.3	75.7	75.7	72.5	71.9	69.7	67.8	67.3	-0.5
% saying most or all	5.9	5.6	4.1	4.7	4.3	4.8	6.4	5.4	5.1	4.5	3.4	3.4	2.6	1.9	2.6	1.9	1.3	1.3	2.0	1.8	2.0	2.8	2.4	-0.4
Take crystal meth. (ice)																								
% saying none	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	90.9	89.8	91.1	90.6	88.2	87.1	84.1	81.4	-2.7
% saying most or all	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.7	1.0	1.5	1.2	1.5	1.7	1.5	2.3	+0.8
Take barbiturates																								
% saying none	55.0	63.7	65.3	67.5	69.3	69.5	68.9	68.7	71.7	73.4	72.9	74.4	75.7	80.3	79.7	82.6	85.2	83.6	82.2	81.8	82.2	78.4	79.6	+1.2
% saying most or all	4.3	3.5	3.0	2.3	2.1	2.6	2.1	1.8	1.7	1.7	1.6	1.4	1.1	1.1	1.4	0.6	0.5	0.6	1.0	1.1	1.4	1.6	1.1	-0.5
Take quaaludes																								
% saying none	68.3	73.0	71.7	73.0	72.3	67.5	65.0	64.5	70.3	73.9	74.0	76.5	78.0	82.9	83.4	85.7	88.0	86.9	85.8	85.8	84.5	81.9	83.9	+2.0
% saying most or all	3.0	1.8	2.9	2.2	2.8	3.6	3.6	2.6	2.6	1.7	1.3	1.6	1.0	1.0	1.3	0.8	0.5	0.8	1.1	1.1	1.3	1.7	1.1	-0.6
Take tranquilizers																								
% saying none	54.4	63.7	62.2	65.2	68.0	70.3	70.5	70.1	73.3	73.4	74.2	75.8	76.7	80.1	82.0	85.1	86.5	85.4	84.5	83.5	84.2	81.9	82.1	+0.2
% saying most or all	3.5	3.1	2.7	1.8	2.0	1.9	1.4	1.1	1.2	1.5	1.2	1.3	1.0	0.7	1.5	0.5	0.4	0.7	0.9	0.9	1.1	1.4	0.8	-0.6
Drink alcoholic beverages																								
% saying none	3.3	4.9	5.6	5.1	4.6	3.9	5.3	4.3	4.5	5.4	5.4	4.4	4.6	4.3	4.9	8.0	8.8	9.5	11.1	9.9	9.1	10.4	9.3	-1.1
% saying most or all	68.4	64.7	66.2	68.9	68.5	68.9	67.7	69.7	69.0	66.6	66.0	68.0	71.8	68.1	67.1	60.5	58.6	56.9	57.0	59.6	56.4	56.4	60.9	+4.5s
Get drunk at least once a week																								
% saying none	17.6	19.3	19.0	18.0	16.7	16.9	18.2	16.9	16.1	18.5	17.5	15.3	14.4	15.6	17.2	20.8	20.2	20.1	20.8	18.6	21.1	21.5	17.6	-3.9ss
% saying most or all	30.1	26.6	27.6	30.2	32.0	30.1	29.4	29.9	31.0	29.6	29.9	31.8	31.3	29.6	31.1	27.5	29.7	28.6	27.6	28.4	27.4	29.0	30.9	+1.9
Smoke cigarettes																								
% saying none	4.8	6.3	6.3	6.9	7.9	9.4	11.5	11.7	13.0	14.0	13.0	12.2	11.7	12.3	13.5	15.1	14.3	15.6	15.2	11.9	12.1	11.7	10.1	-1.6
% saying most or all	41.5	36.7	33.9	32.2	28.6	23.3	22.4	24.1	22.4	19.2	22.8	21.5	21.0	20.2	23.1	21.4	21.8	21.4	25.0	25.3	27.5	30.4	34.4	+4.0s
Take steroids																								
% saying none								—	—	—	—	—	—	—	—	74.1	75.3	78.5	81.0	81.9	80.5	82.1	81.1	-1.0
% saying most or all					—	—	—	—	—	—	—	—	—	—	—	1.8	1.0	1.7	0.9	1.2	1.3	0.8	1.7	+0.9s
Approx. N =	*2640*	*2697*	*2788*	*3247*	*2933*	*2987*	*3307*	*3303*	*3095*	*2945*	*2971*	*2798*	*2948*	*2961*	*2587*	*2361*	*2339*	*2373*	*2410*	*2337*	*2379*	*2156*	*2292*	

NOTES: Level of significance of difference between the two most recent classes: s = .05, ss = .01, sss = .001. '—' indicates data not available.

SOURCE: The Monitoring the Future Study, the University of Michigan.

*These estimates were derived from responses to the questions listed. "Any illicit drug" includes all of the drugs listed except MDMA (ecstasy), cocaine powder, crystal methamphetamine (ice), alcohol, get drunk, cigarettes, and steroids. PCP and the nitrites were not included in 1975 through 1978. Crack was not included in 1975 through 1986.

FIGURE 9-3

Trends in Thirty-Day Prevalence of Marijuana Use and Friends' Use of Marijuana for Twelfth Graders

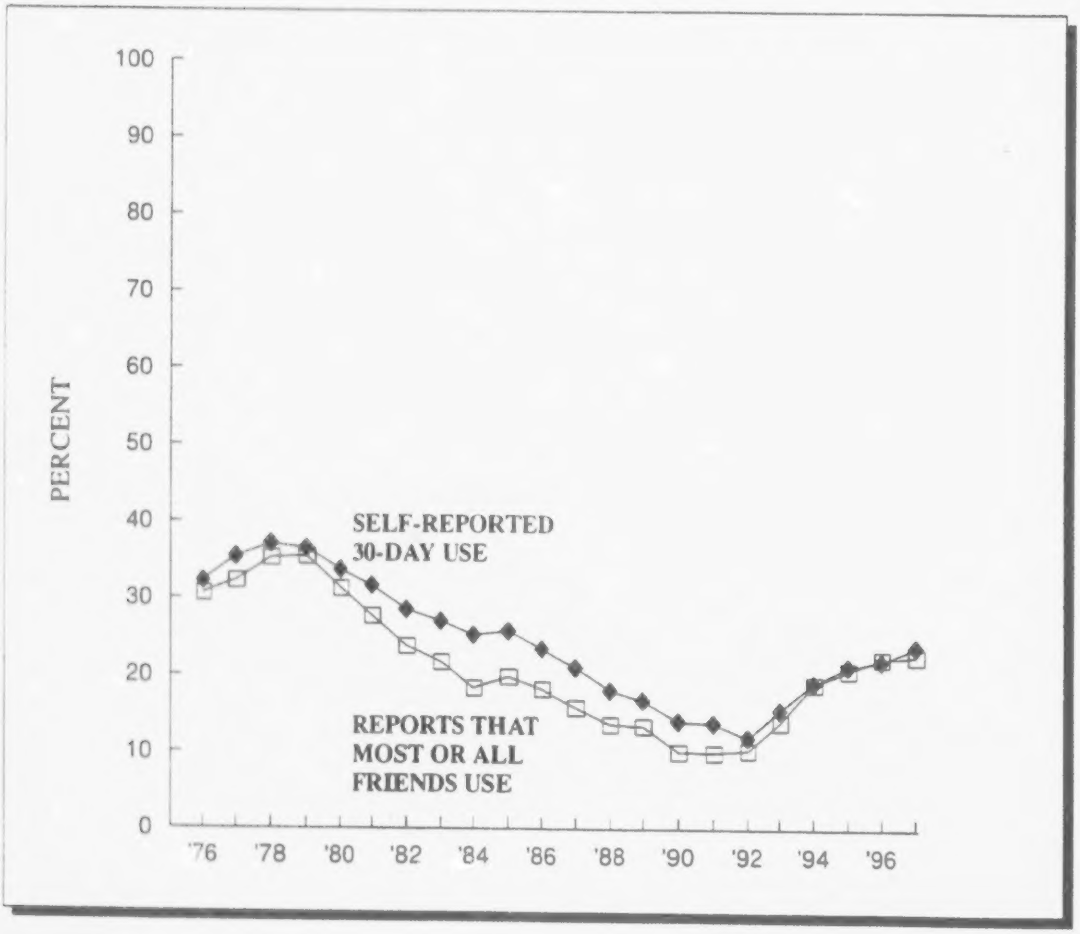
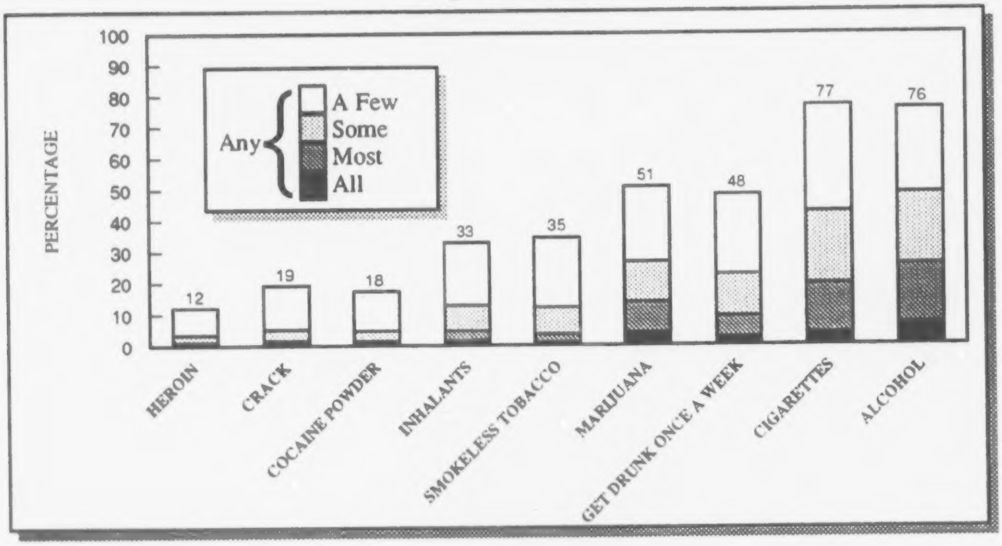


FIGURE 9-4

Proportion of Friends Using Each Drug as Estimated by Eighth, Tenth, and Twelfth Graders, 1997

Eighth Graders



Tenth Graders

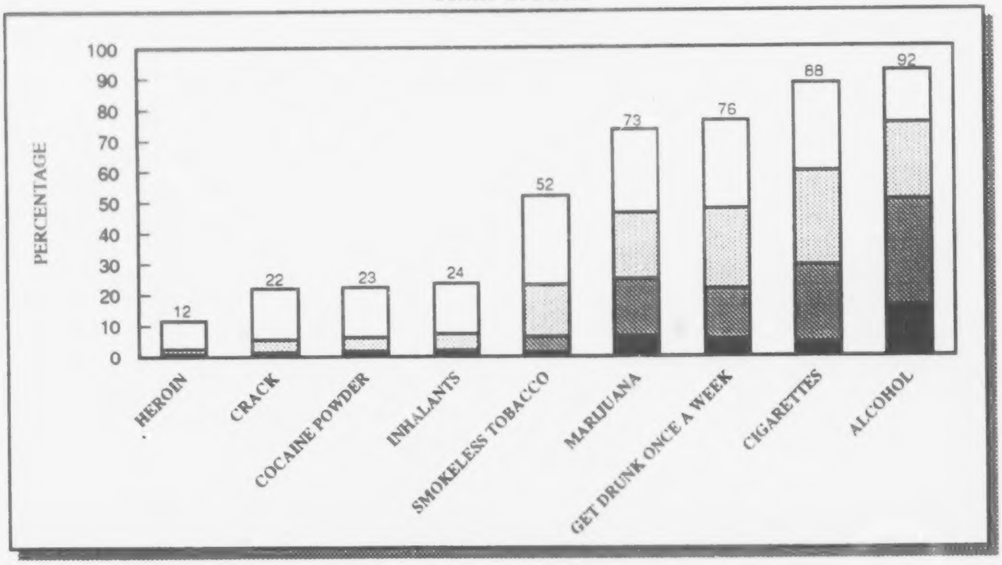


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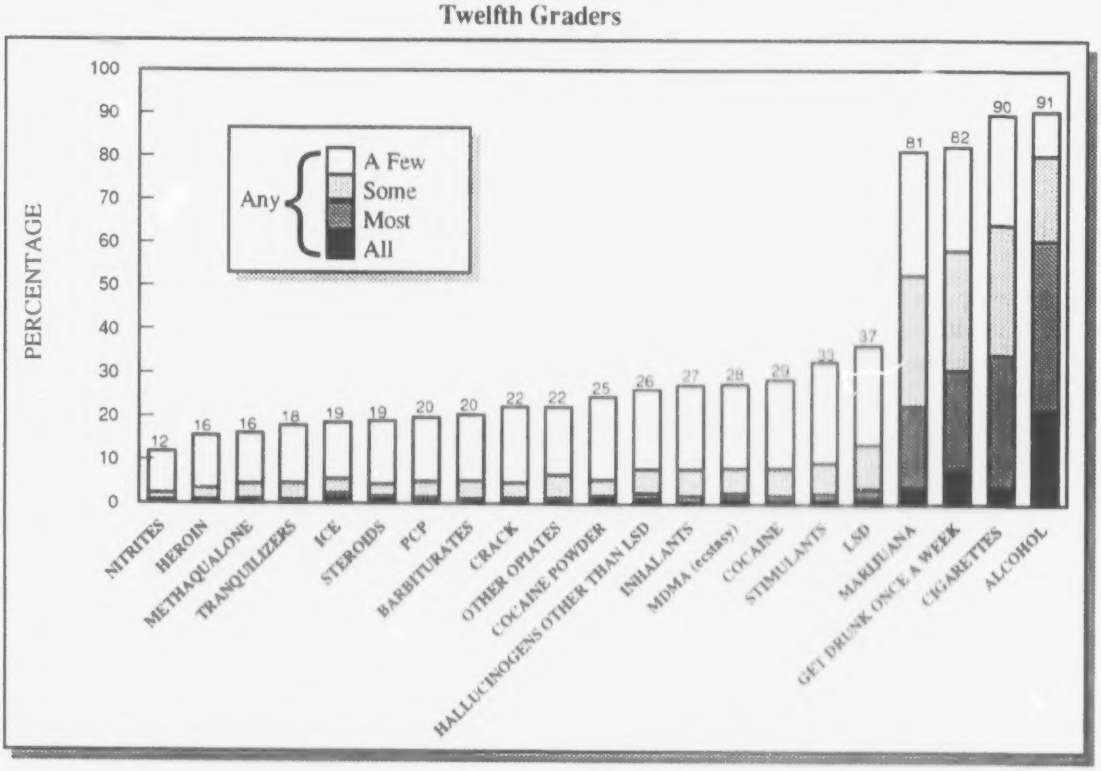
FIGURE 9-4 (cont.)

Proportion of Friends Using Each Drug as Estimated by Eighth, Tenth, and Twelfth Graders, 1997



- For ***alcohol***, both self-reported use and friends' use have moved in fairly parallel ways since 1992. Self-reported drinking in the past 30 days has been fairly stable among both eighth and tenth graders since 1992, as has been the proportion who say they have some friends who drink alcohol. (In 1997 both measures showed some decline among eighth graders.) Self-reported ***drunkenness*** increased slightly in both grades between 1992 and 1996, as did the proportion saying they have some friends who get drunk weekly. Here too, in 1997 a small reversal showed up on both measures among eighth graders.

- The data from eighth and tenth graders show a steadily increasing proportion of friends ***smoking*** cigarettes between 1991 and 1996. Self-reported smoking rates rose during the same period. In 1997, both measures showed a slight reversal in both grades.

PERCEIVED AVAILABILITY OF DRUGS

One set of questions asks respondents how difficult they think it would be to obtain each of a number of different drugs if they wanted it. The answers range across five categories from "probably impossible" to "very easy."[51] While no systematic effort has been undertaken to assess directly the validity of these measures, it must be said that they do have a rather high level of face validity, particularly if it is the subjective reality of "perceived availability" that is purported to be measured. It also seems quite reasonable to us to assume that, to some extent, perceived availability tracks actual availability.

Perceived Availability

- There are substantial differences in the perceived availability of the various drugs. In general, the more widely used drugs are reported to be available by higher proportions of the age group, as would be expected (see Table 9-5). Also, as would be expected, drugs are generally more available to older age groups. Both associations are consistent with the notion that availability is largely attained through friendship circles. The higher the proportion of a friendship circle that uses a drug, the greater the proportion of students who have access to it.

- Because many ***inhalants***—such as glues, butane, and aerosols—are universally available we do not include a question about their availability.

- In addition, the availability of ***alcohol*** and ***cigarettes*** is not asked of twelfth graders because we have assumed that these drugs are almost universally available to them as well. However, eighth and tenth graders

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[51] In the questionnaires used for eighth and tenth graders, an additional answer category of "can't say, drug unfamiliar" is offered; respondents who chose this answer are included in the calculation of percentages. Generally, fewer than 20% of the respondents selected this answer.

TABLE 9-5

Trends in Perceived Availability of Drugs Eighth, Tenth, and Twelfth Graders, 1992–97

Percent saying "fairly easy" or "very easy" to get[a]

How difficult do you think it would be for you to get each of the following types of drugs, if you wanted some?	8th Grade							10th Grade							12th Grade						
	1992	1993	1994	1995	1996	1997	'96–'97 change	1992	1993	1994	1995	1996	1997	'96–'97 change	1992	1993	1994	1995	1996	1997	'96–'97 change
Marijuana	42.3	43.8	49.9	52.4	54.8	54.2	-0.6	65.2	68.4	75.0	78.1	81.1	80.5	-0.6	82.7	83.0	85.5	88.5	88.7	89.6	+0.9
LSD	21.5	21.8	21.8	23.5	23.6	22.7	-0.9	33.6	35.8	36.1	39.8	41.0	38.3	-2.7ss	44.5	49.2	50.8	53.8	51.3	50.7	-0.6
PCP[b]	18.0	18.5	17.7	19.0	19.6	19.2	-0.4	23.7	23.4	23.8	24.7	26.8	24.8	-2.0	31.7	31.7	31.4	31.0	30.5	30.0	-0.5
Crack	25.6	25.9	26.9	28.7	27.9	27.5	-0.4	33.7	33.0	34.2	34.6	36.4	36.0	-0.4	43.5	43.6	40.5	41.9	40.7	40.6	-0.1
Cocaine Powder	25.7	25.9	26.4	27.8	27.2	26.9	-0.3	35.0	34.1	34.5	35.3	36.9	37.1	+0.2	48.0	45.4	43.7	43.8	44.4	43.3	-1.1
Heroin	19.7	19.8	19.4	21.1	20.6	19.8	-0.8	24.3	24.3	24.7	24.6	24.8	24.4	-0.4	34.9	33.7	34.1	35.1	32.2	33.8	+1.6
Other Opiates[b]	19.8	19.0	18.3	20.3	20.0	20.6	+0.6	26.9	24.9	26.9	27.8	29.4	29.0	-0.4	37.1	37.5	38.0	39.8	40.0	38.9	-1.1
Amphetamines	32.2	31.4	31.0	33.4	32.6	30.6	-2.0s	43.4	46.4	46.6	47.7	47.2	44.6	-2.6ss	58.8	61.5	62.0	62.8	59.4	59.8	+0.4
Crystal Meth. (Ice)[b]	16.0	15.1	14.1	16.0	16.3	15.7	-0.6	18.8	16.4	17.8	20.7	22.6	22.9	+0.3	26.0	26.6	25.6	27.0	26.9	27.6	+0.7
Barbiturates	27.4	26.1	25.3	26.5	25.6	24.4	-1.2	38.0	38.8	38.3	38.8	38.1	35.6	-2.5ss	44.0	44.5	43.3	42.3	41.4	40.0	-1.4
Tranquilizers	22.9	21.4	20.4	21.3	20.4	19.6	-0.8	31.6	30.5	29.8	30.6	30.3	28.7	-1.6	40.9	41.1	39.2	37.8	36.0	35.4	-0.6
Alcohol	76.2	73.9	74.5	74.9	75.3	74.9	-0.4	88.6	88.9	89.8	89.7	90.4	89.0	-1.4ss	—	—	—	—	—	—	—
Cigarettes	77.8	75.5	76.1	76.4	76.9	76.0	-0.9	89.1	89.4	90.3	90.7	91.3	89.6	-1.7sss	—	—	—	—	—	—	—
Steroids	24.0	22.7	23.1	23.8	24.1	23.6	-0.5	37.6	33.6	33.6	34.8	34.8	34.2	-0.6	46.8	44.8	42.9	45.5	40.3	41.7	+1.4
Approx. N =	*8355*	*16775*	*16119*	*15496*	*16318*	*16482*		*7014*	*14652*	*15192*	*16209*	*14887*	*14856*		*2586*	*2670*	*2526*	*2552*	*2340*	*2517*	

NOTES: Level of significance of difference between the two years: s = 05, ss =.01, sss =.001. '—' indicates data not available.
SOURCE: The Monitoring the Future Study, the University of Michigan

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[a] Answer alternatives were: (1) Probably impossible, (2) Very difficult, (3) Fairly difficult, (4) Fairly easy, (5) Very easy. For 8th and 10th grades, there was another category—"Can't say, drug unfamiliar"—which was included in the calculation of these percentages.

[b] 8th and 10th grade only: Data based on one of two forms; N is one-half of N indicated in 1993-96.

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BEST COPY AVAILABLE

TABLE 9-6

Long-Term Trends in Perceived Availability of Drugs, Twelfth Graders

How difficult do you think it would be for you to get each of the following types of drugs, if you wanted some?	Percent saying "fairly easy" or "very easy" to get*																							
	Class of 1975	Class of 1976	Class of 1977	Class of 1978	Class of 1979	Class of 1980	Class of 1981	Class of 1982	Class of 1983	Class of 1984	Class of 1985	Class of 1986	Class of 1987	Class of 1988	Class of 1989	Class of 1990	Class of 1991	Class of 1992	Class of 1993	Class of 1994	Class of 1995	Class of 1996	Class of 1997	'96–'97 change
Marijuana	87.8	87.4	87.9	87.8	90.1	89.0	89.2	88.5	86.2	84.6	85.5	85.2	84.8	85.0	84.3	84.4	83.3	82.7	83.0	85.5	88.5	88.7	89.6	+0.9
Amyl/Butyl Nitrites	—	—	—	—	—	—	—	—	—	—	—	—	23.9	25.9	26.8	24.4	22.7	25.9	25.9	26.7	26.0	23.9	23.8	-0.1
LSD	46.2	37.4	34.5	32.2	34.2	35.3	35.0	34.2	30.9	30.6	30.5	28.5	31.4	33.3	38.3	40.7	39.5	44.5	49.2	50.8	53.8	51.3	50.7	-0.6
Some other psychedelic	47.8	35.7	33.8	33.8	34.6	35.0	32.7	30.6	26.6	26.6	26.1	24.9	25.0	26.2	28.2	28.3	28.0	29.9	33.5	33.8	35.8	33.9	33.9	0.0
PCP	—	—	—	—	—	—	—	—	—	—	—	—	22.8	24.9	28.9	27.7	27.6	31.7	31.7	31.4	31.0	30.5	30.0	-0.5
MDMA (Ecstasy)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	21.7	22.0	22.1	24.2	28.1	31.2	34.2	36.9	38.8	+1.9
Cocaine	37.0	34.0	33.0	37.8	45.5	47.9	47.5	47.4	43.1	45.0	48.9	51.5	54.2	55.0	58.7	54.5	51.0	52.7	48.5	46.6	47.7	48.1	48.5	+0.4
Crack	—	—	—	—	—	—	—	—	—	—	—	—	41.1	42.1	47.0	42.4	39.9	43.5	43.6	40.5	41.9	40.7	40.6	-0.1
Cocaine powder	—	—	—	—	—	—	—	—	—	—	—	—	52.9	50.3	53.7	49.0	46.0	48.0	45.4	43.7	43.8	44.4	43.3	-1.1
Heroin	24.2	18.4	17.9	16.4	18.9	21.2	19.2	20.8	19.3	19.9	21.0	22.0	23.7	28.0	31.4	31.9	30.6	34.9	33.7	34.1	35.1	32.2	33.8	+1.6
Some other narcotic (including methadone)	34.5	26.9	27.8	26.1	28.7	29.4	29.6	30.4	30.0	32.1	33.1	32.2	33.0	35.8	38.3	38.1	34.6	37.1	37.5	38.0	39.8	40.0	38.9	-1.1
Amphetamines	67.8	61.8	58.1	58.5	59.9	61.3	69.5	70.8	68.5	68.2	66.4	64.3	64.5	63.9	64.3	59.7	57.3	58.8	61.5	62.0	62.8	59.4	59.8	+0.4
Crystal meth. (ice)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	24.1	24.3	26.0	26.6	25.6	27.0	26.9	27.6	+0.7
Barbiturates	60.0	54.4	52.4	50.6	49.8	49.1	54.9	55.2	52.5	51.9	51.3	48.3	48.2	47.8	48.4	45.9	42.4	44.0	44.5	43.3	42.3	41.4	40.0	-1.4
Tranquilizers	71.8	65.5	64.9	64.3	61.4	59.1	60.8	58.9	55.3	54.5	54.7	51.2	48.6	49.1	45.3	44.7	40.8	40.9	41.1	39.2	37.8	36.0	35.4	-0.6
Steroids	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	46.7	46.8	44.8	42.9	45.5	40.3	41.7	+1.4
Approx. N =	*2627*	*2865*	*3065*	*3598*	*3172*	*3240*	*3578*	*3602*	*3385*	*3269*	*3274*	*3077*	*3271*	*3231*	*2806*	*2549*	*2476*	*2586*	*2670*	*2526*	*2552*	*2340*	*2517*	

NOTES: Level of significance of difference between the two most recent classes: s = .05, ss = .01, sss = .001. '–' indicates data not available.
SOURCE: The Monitoring the Future Study, the University of Michigan.

*Answer alternatives were: (1) Probably impossible, (2) Very difficult, (3) Fairly difficult, (4) Fairly easy, and (5) Very easy.

are asked about the availability of ***alcohol*** and ***cigarettes***, and even at these grade levels it is extremely high.

- Among eighth and tenth graders, ***cigarettes*** are seen as most available: 76% of eighth graders and 90% of tenth graders think they would be "fairly easy" or "very easy" to get.

- The great majority of these youngsters also see ***alcohol*** as readily available: 75% of the eighth graders and 89% of the tenth graders say they could get it fairly easily or very easily.

- In contrast, far fewer younger students see that illicit drugs are as accessible. Even so, ***marijuana*** is described as "fairly easy" or "very easy" to get by over half (54%) of the eighth graders, followed by ***amphetamines*** (31%), ***crack*** (28%), ***cocaine powder*** (27%), ***barbiturates*** (24%), ***steroids*** (24%), and ***LSD*** (23%).

- When we compare eighth, tenth, and twelfth graders, we find that perceived availability rises sharply with grade level. For example, in 1997, 54% of eighth graders said ***marijuana*** would be "fairly easy" or "very easy" to get, vs. 81% of tenth graders and 90% of twelfth graders. In fact, for the other drugs included in the questions, the proportion of students saying they are available to them nearly doubles between eighth grade and twelfth grade. These differences are probably attributable to the overall differences in prevalence rates across these grade levels. Children in lower grades are considerably less likely to have friends who use these drugs and, thus, are less likely to have access through those friends. The differences between age groups may also reflect less willingness and/or less motivation on the part of those who deal drugs to establish contact with younger children.

- ***Marijuana*** appears to be universally available to high school seniors; some 90% reported that they think it would be "very easy" or "fairly easy" for them to get it—almost twice the number who reported ever having used it (50%).

- After marijuana, twelfth grade students indicated that ***amphetamines*** are among the easiest drugs to obtain (60%).

- Half of the seniors (51%) saw ***LSD*** as readily available, while just under half saw the following drugs as readily available: ***cocaine powder*** (43%), ***steroids*** (42%), ***crack*** (41%), and ***barbiturates*** (40%).

- ***Opiates other than heroin***, ***MDMA*** (ecstasy), ***tranquilizers***, ***psychedelics other than LSD***, ***heroin***, and ***PCP*** are reported as available by substantial minorities of seniors (39%, 39%, 35%, 34%, 34%, and 30%, respectively). See Table 9-6 for the full list of drugs included in the questions for twelfth graders; a few of these were not asked of the younger students.

- Even drugs with lower usage rates, such as ***ice*** and the ***nitrite inhalants***, are seen as available by approximately a quarter of the seniors.

- Previously, we have found that two-thirds or more of the twelfth graders who had actually used any of the illicit drugs in the past year felt that drug would be easy for them to get.

Trends in Perceived Availability for Twelfth Graders

Trend data on availability for seniors are presented in Table 9-6 and Figures 9-5a through 9-5c.

- For the first time since the study began in 1975, ***marijuana*** showed a small but statistically significant decline in perceived availability between 1982 and 1984 (down 4 percentage points to 85%), undoubtedly due to the reduced proportion of seniors who had friends using it. There was little further change until 1994, when a significant increase in perceived availability occurred, corresponding to a sharp increase in the proportion of friends using it. Both variables have increased some since 1995.

- ***Amphetamine*** availability jumped 11 percentage points between 1979 and 1982 (to 71%), but it then dropped by 14 percentage points between 1982 and 1991 (to 57%). Between 1991 and 1995, availability increased steadily, reaching 63% in 1995, followed by a significant decrease to 59% in 1996, where it has leveled.

- The perceived availability of ***barbiturates*** jumped about 6 percentage points between 1980 and 1982 and then fell by 13 points between 1982 and 1991, reflecting its long-term drop in the number of users. It has declined a little more in recent years.

- Between 1977 and 1980—a period of increased overall ***cocaine*** use—there was a substantial increase (15 percentage points) in the perceived availability of cocaine (see Table 9-6 and Figure 9-5a). Availability then leveled and even dropped some in 1983 and 1984, before rising steadily through 1989. After 1986 actual use of cocaine dropped sharply until 1993, but reported availability continued to rise through 1989. Because there was no drop in perceived availability between 1986 and 1989, we discount reduction in supply as an explanation for the significant decline in use observed during that period.

  Between 1989 and 1994, there was a significant decrease of 12 percentage points in perceived availability—perhaps reflecting the impact of the greatly reduced proportion of seniors who had friends using cocaine. The percentage reporting having friends who use it dropped by 11 points during the same interval. Since 1994, ***cocaine*** availability has increased slightly, as has its use among seniors.

- ***Crack*** availability has been asked about since 1987; it has fluctuated between 40% and 47%, with no clear trend (Figure 9-5a).

- The use of ***tranquilizers*** declined fairly steadily between 1977 and 1992, and perceived availability declined fairly steadily and quite substantially. In fact, the proportion of seniors who thought they could get tranquilizers "fairly easily" fell by half—from 72% in 1975 to 35% in 1997.

- The availability of ***LSD*** fell sharply in the first year interval covered by the study (1975-1976), perhaps reflecting the end of a longer-term steep decline (see Figure 9-5c). Availability then leveled for a while, before dropping further in the first half of the 1980s. Between 1986 and 1995, there followed a substantial, though slightly irregular, increase in the availability of LSD, which rose from 29% to 54% (the highest level it reached in over two decades). Since 1995, there has been a little fall-off in availability.

- The availability of ***psychedelics other than LSD*** followed a very similar trajectory from 1975 through 1986 (see Figure 9-5c), but it showed much less of a rise in the nine years following. Their availability also began to decline a little after 1995.

- Between 1979 and 1987, self-reported use of ***PCP*** dropped substantially, before stabilizing at a very low level for some years. However, availability rose from 23% in 1987 (when it was first measured) to 32% in 1992, before gradually decreasing to 30% by 1997. (Self-reported use increased some from 1993-1996.)

- From 1975 through 1978, ***heroin*** availability declined some. Then a rather long, irregular, and gradual increase in availability began and continued through 1992. (The 1978-1992 rise was from 16% to 35% saying heroin would be "fairly easy" or "very easy" to get.) Despite this substantial increase in availability, there was very little change in use during that period. Since then availability has been fairly level: Use has increased some among seniors in 1994 through 1997.

- Much like heroin, ***other opiates*** showed a gradual, upward shift in availability, from 29% in 1979 to 38% in 1989, and a slight, further increase through 1996.

Trends in Perceived Availability for Eighth and Tenth Graders

- Because information on drug availability was first gathered from eighth and tenth graders in 1992, we can characterize change only since then.

Over this period, eighth and tenth graders have shown a rise in the availability of several of the illicit drugs.

- The proportion of eighth graders seeing ***marijuana*** as easy to get rose sharply between 1992 and 1997, from 42% to 54%, while among tenth graders there has been an even greater increase (from 65% to 81%) over the same interval. Twelfth graders showed the smallest increase (from 83% to 90%) because they started with such a high level of availability. There was little change at any grade level in 1997.

- ***LSD*** availability also had been rising between 1992 and 1996—only from 22% to 24% among eighth graders, but from 34% to 41% among tenth graders and from 45% to 51% among twelfth graders. In 1997, there seemed to be some decline in LSD availability.

- ***Crack*** became slightly more available to eighth and tenth graders (but not twelfth graders) between 1993 and 1996, but there was no further change in 1997.

- Although ***cocaine powder*** became less available to twelfth graders between 1992 and 1997, it may have become slightly more available to eighth and tenth graders until 1997, when availability leveled for them.

- For ***heroin***, the only change in availability observed since 1992 was a slight, but significant, increase among eighth graders in 1995 (from 19% in 1994 to 21%), with a decline since then, to 20% in 1997.

- There was a modest but steady increase in the availability of ***amphetamines*** from 1992 to 1995 in the upper two grade levels, but there has been some fall-off since.

- For most of the other drugs shown in Table 9-5, there has been rather little systematic change in availability since 1992. This includes ***ice***, ***barbiturates***, ***alcohol***, and ***cigarettes***. (The latter three showed statistically significant declines in 1997, but only among 10th graders.) ***Steroids*** have shown a modest decline in availability among 12th graders.

The Importance of Supply Reduction vs. Demand Reduction

- Overall, it is important to note that ***supply reduction*** does not appear to have played a major role in perhaps the two most important downturns in drug use that have occurred to date, namely, those for ***marijuana*** and ***cocaine*** (see Figures 8-4 and 8-5). In the case of cocaine, perceived availability actually rose during much of the period of the downturn in use. (These data are corroborated by data from the Drug Enforcement Administration on trends in the price and purity of cocaine on the streets.) In the case of marijuana, availability has remained almost universal to twelfth graders over the last 23 years, while use dropped substantially from 1979 through 1993. Similarly, ***amphetamine*** use declined appreciably from 1981 to 1992, with only a modest corresponding change in perceived availability. Finally, until 1995, ***heroin*** use had not risen among seniors even though availability had increased substantially.

- What *did change* dramatically were young peoples' beliefs about the dangers of using ***marijuana*** and ***cocaine***. As we have been saying for some years, we believe these changes led to a decrease in use directly through their impact on the young peoples' demand for these drugs and indirectly through their impact on personal disapproval and, subsequently, peer norms. Because the perceived risk of ***amphetamine*** use was not changing much when amphetamine use was declining substantially (1981-1986), other factors must have helped to account for the decline in demand for that class of drugs—quite conceivably a displacement to cocaine. Because the three classes of drugs (marijuana, cocaine, and amphetamines) have shown *different* patterns of change, it is highly unlikely that a general factor (e.g., a general shift against drug use) can explain their various trends.

  The increase in ***marijuana*** use in the 1990s among all grades surveyed adds more compelling evidence to this interpretation. It was neither preceded nor accompanied by any increase in perceived availability, but it was *both* preceded and accompanied by a decrease in perceived risk. Peer disapproval dropped sharply in 1993 through 1997, *after* perceived risk began to change, consistent with our interpretation that perceived risk can be an important determinant of disapproval.

FIGURE 9-5a

Trends in Perceived Availability of Drugs for Twelfth Graders

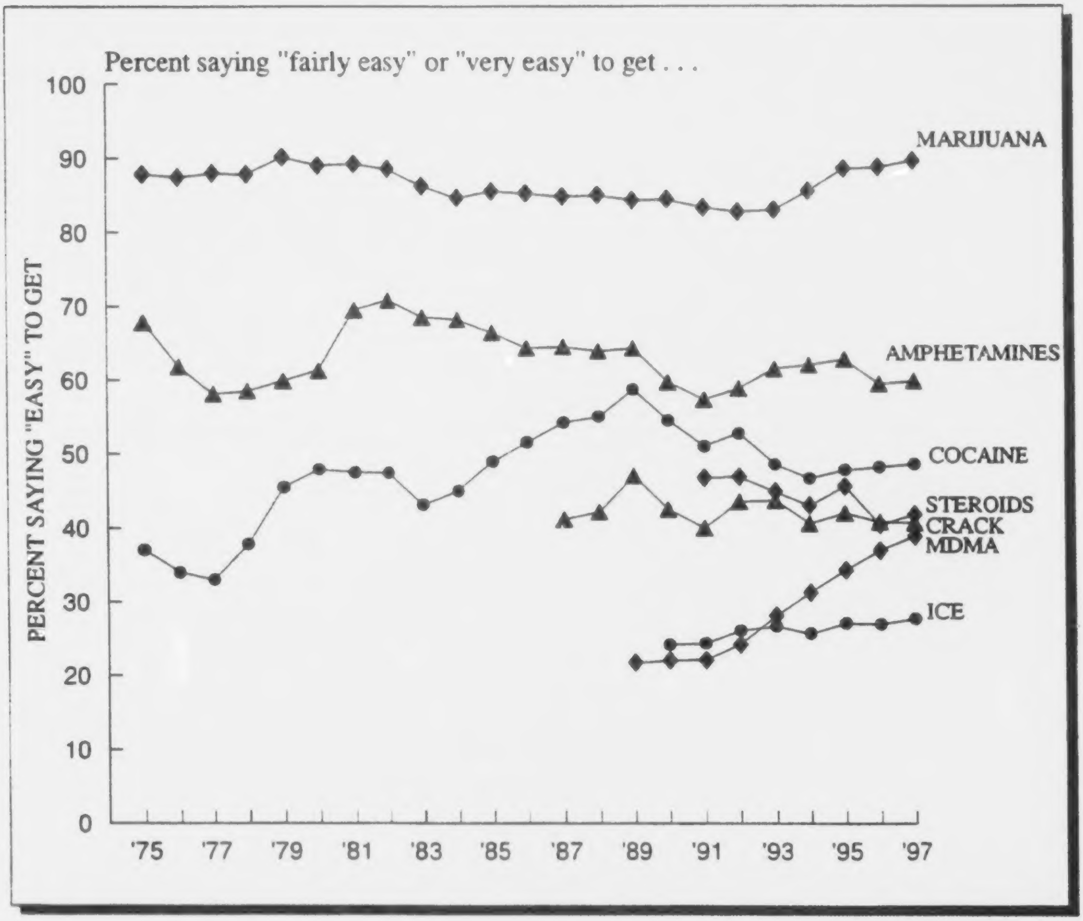


FIGURE 9-5b

Trends in Perceived Availability of Drugs for Twelfth Graders

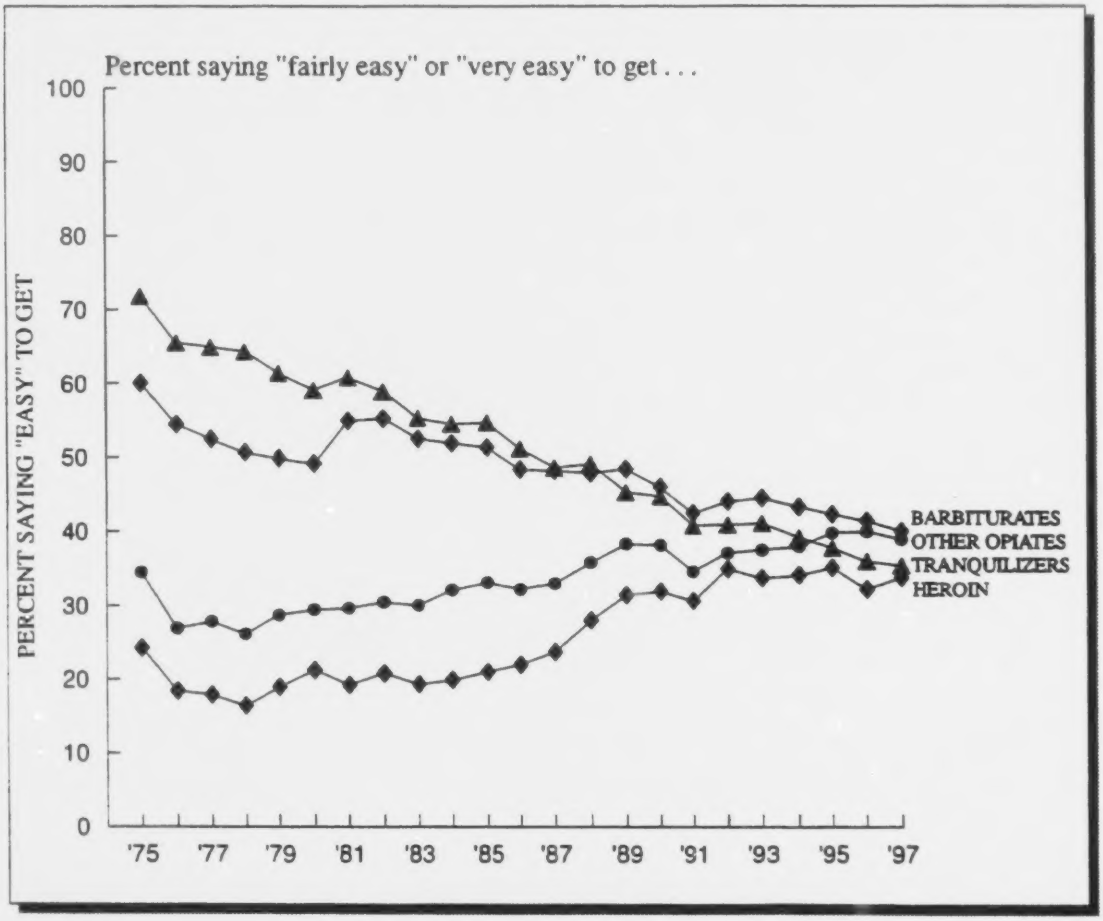
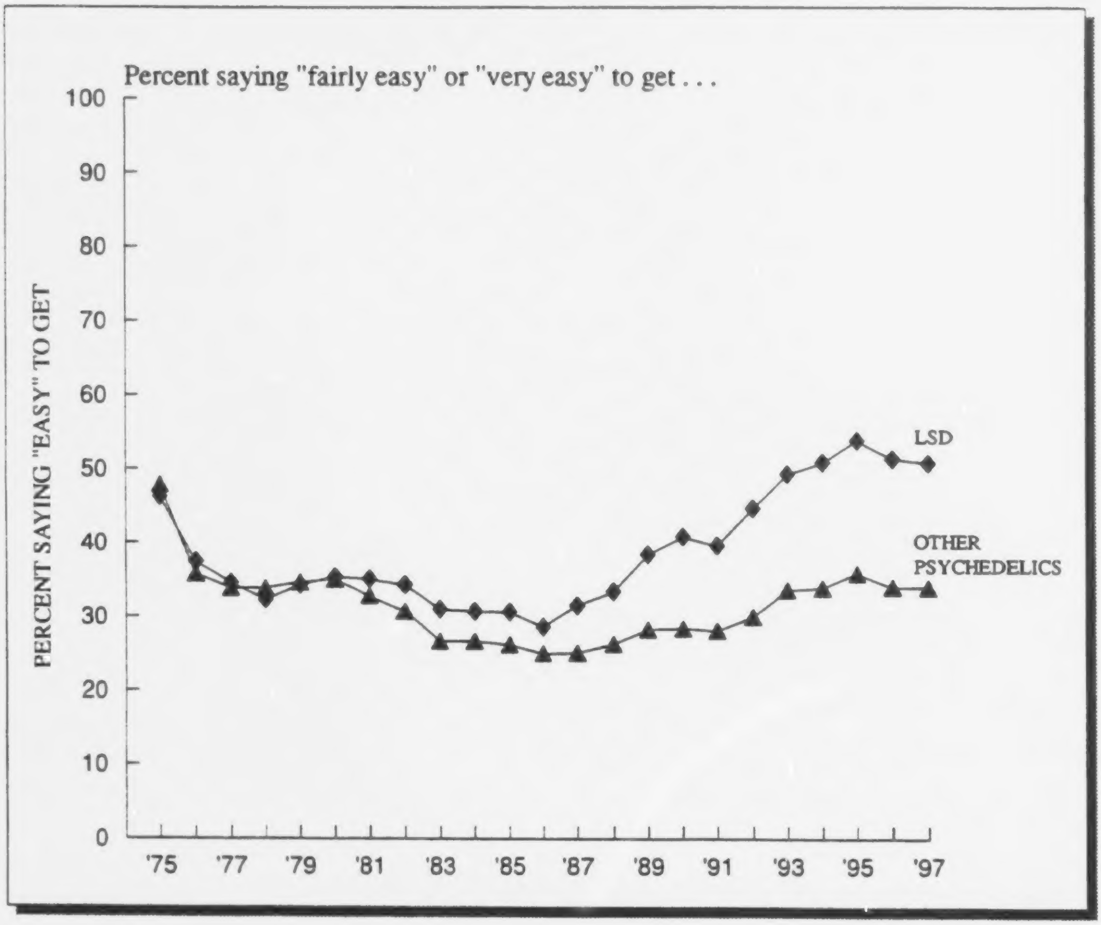


FIGURE 9-5c

Trends in Perceived Availability of Drugs for Twelfth Graders



Chapter 10

OTHER FINDINGS FROM THE STUDY

Each year this section presents additional recent findings from the Monitoring the Future study. The sections on the use of nonprescription stimulants and the daily use of marijuana represent original analyses and have not been reported elsewhere.

THE USE OF NONPRESCRIPTION STIMULANTS

As is discussed in other chapters of this report, between 1979 and 1981 we observed a substantial increase in reported stimulant use by high school students. We had reason to believe that a fair part of that increase was attributable to the use of nonprescription stimulants of two general types—"look-alike" drugs (pseudo-amphetamines, usually sold by mail order, which look like and often have names that sound like real amphetamines) and over-the-counter stimulants (primarily diet pills and stay-awake pills). These drugs usually contain caffeine, ephedrine, and/or phenylpropanolamine as their active ingredient(s).

Prompted by this development, we introduced new questions in some questionnaire forms, beginning in 1982, in order to assess more accurately the use of amphetamines as well as to assess the use of the "look-alikes," diet pills, and stay-awake pills of the nonprescription variety. For example, in a single form of the twelfth-grade questionnaire forms beginning in 1982, respondents were asked to indicate on how many occasions (if any) they had taken nonprescription diet pills such as Dietac™, Dexatrim™, and Prolamine™ (a) in their lifetime, (b) in the prior 12 months, and (c) in the prior 30 days. (These correspond to the standard usage questions asked for all drugs.) Similar questions were asked about the use of nonprescription stay-awake pills (such as No-Doz™, Vivarin™, Wake™, and Caffedrine™) and the "look-alike" stimulants. (The latter are described at some length in the actual question.)

In three of the five questionnaire forms in 1982 and 1983 (and in all questionnaire forms thereafter) respondents were also asked about their use of prescription amphetamines, with very explicit instructions to exclude the use of over-the-counter and "look-alike" drugs.

Prevalence of Use in 1997 Among Seniors

- Tables 10-1a, 10-1b, and 10-1c provide the prevalence of use levels for these various classes of stimulants. As can be seen, a substantial proportion of twelfth- grade students (17%) have used over-the-counter ***diet pills*** and 5% have used them in just the past month. Some 0.4% of seniors reported using them daily.

TABLE 10-1a

Non-Prescription Diet Pills: Trends in Twelfth Graders' Lifetime, Annual, and Thirty-Day Prevalence of Use, by Sex[a]

(Entries are percentages)

Prevalence	Class of 1982	Class of 1983	Class of 1984	Class of 1985	Class of 1986	Class of 1987	Class of 1988	Class of 1989	Class of 1990	Class of 1991	Class of 1992	Class of 1993	Class of 1994	Class of 1995	Class of 1996	Class of 1997	'96–'97 change
Lifetime																	
Total	29.6	31.4	29.7	28.7	26.6	25.5	21.5	19.9	17.7	17.2	15.0	14.8	14.9	15.6	16.0	16.6	+0.6
Males	16.5	17.4	14.8	14.8	13.1	12.4	9.4	9.1	7.8	5.9	6.4	5.6	4.5	6.1	5.5	8.1	+2.6s
Females	42.2	44.8	43.1	41.5	39.7	38.3	32.6	30.2	28.3	28.1	23.2	23.3	23.7	23.9	25.5	24.5	-1.0
Annual																	
Total	20.5	20.5	18.8	16.9	15.3	13.9	12.2	10.9	10.4	8.8	8.4	8.0	9.3	9.8	9.3	9.8	+0.5
Males	10.7	10.6	9.2	9.0	6.9	6.4	4.9	4.3	4.3	3.0	4.3	3.2	2.5	3.5	3.7	4.9	+1.2
Females	29.5	30.0	27.5	24.4	23.2	21.1	18.8	17.2	16.7	14.2	12.2	12.3	14.9	15.1	14.1	14.6	+0.5
Thirty-Day																	
Total	9.8	9.5	9.9	7.3	6.5	5.8	5.1	4.8	4.3	3.7	4.0	3.8	4.2	3.8	4.3	4.6	+0.3
Males	5.0	4.0	4.8	3.7	3.2	2.7	1.8	2.3	1.9	1.4	1.9	1.9	1.3	1.1	2.3	2.3	0.0
Females	14.0	13.7	14.2	10.7	9.6	8.9	8.3	7.0	6.7	5.5	5.8	4.9	6.4	5.7	5.8	7.0	+1.2

NOTE: Level of significance of difference between the two most recent classes: s = .05, ss= .01, sss = .001.
SOURCE: The Monitoring the Future Study, the University of Michigan.

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[a] Data based on one form. Total N for 1982-89 is approximately 3,300. For 1990-97, the total N is approximately 2,600.

TABLE 10-1b

Stay-Awake Pills: Trends in Twelfth Graders' Lifetime, Annual, and Thirty-Day Prevalence, by Sex[a]

(Entries are percentages)

Prevalence	Class of 1982	Class of 1983	Class of 1984	Class of 1985	Class of 1986	Class of 1987	Class of 1988	Class of 1989	Class of 1990	Class of 1991	Class of 1992	Class of 1993	Class of 1994	Class of 1995	Class of 1996	Class of 1997	'96–'97 change
Lifetime																	
Total	19.1	20.4	22.7	26.3	31.5	37.4	37.4	36.3	37.0	37.0	35.6	30.5	31.3	31.2	30.5	31.0	+0.5
Males	20.2	22.3	23.2	28.0	32.0	34.8	38.0	37.7	35.3	36.0	34.4	30.4	30.2	29.0	27.4	27.3	-0.1
Females	16.9	18.2	21.7	24.9	31.3	39.4	36.7	35.1	39.2	37.9	37.3	30.1	32.2	32.3	32.1	34.5	+2.4
Annual																	
Total	11.8	12.3	13.9	18.2	22.2	25.2	26.4	23.0	23.4	22.2	20.4	19.1	20.7	20.3	19.0	19.7	+0.7
Males	12.8	13.8	15.4	19.7	22.3	25.5	27.6	24.8	22.3	22.3	20.9	19.7	20.3	19.7	18.2	17.4	-0.8
Females	10.0	10.5	12.5	17.0	22.2	25.0	25.2	21.7	24.5	22.0	20.2	17.6	20.4	20.1	18.7	21.0	+2.3
Thirty-Day																	
Total	5.5	5.3	5.8	7.2	9.6	9.2	9.8	8.5	7.3	6.8	7.2	7.0	6.3	7.3	7.5	7.8	+0.3
Males	6.0	5.5	6.2	7.7	9.5	9.3	11.0	10.0	7.1	7.6	7.8	7.9	5.9	6.3	8.0	6.7	-1.3
Females	4.7	4.5	5.5	6.7	9.3	9.1	8.6	6.9	7.3	5.5	6.5	5.5	5.8	7.1	6.1	8.2	+2.1

NOTE: Level of significance of difference between the two most recent classes: s = .05, ss = .01, sss = .001.
SOURCE: The Monitoring the Future Study, the Univesity of Michigan.

[a] Data based on one form. Total N for 1982-89 is approximately 3,300. For 1990-97, the total N is approximately 2,600.

TABLE 10-1c

Look-Alikes: Trends in Twelfth Graders' Lifetime, Annual, and Thirty-Day Prevalence of Use, by Sex[a]

(Entries are percentages)

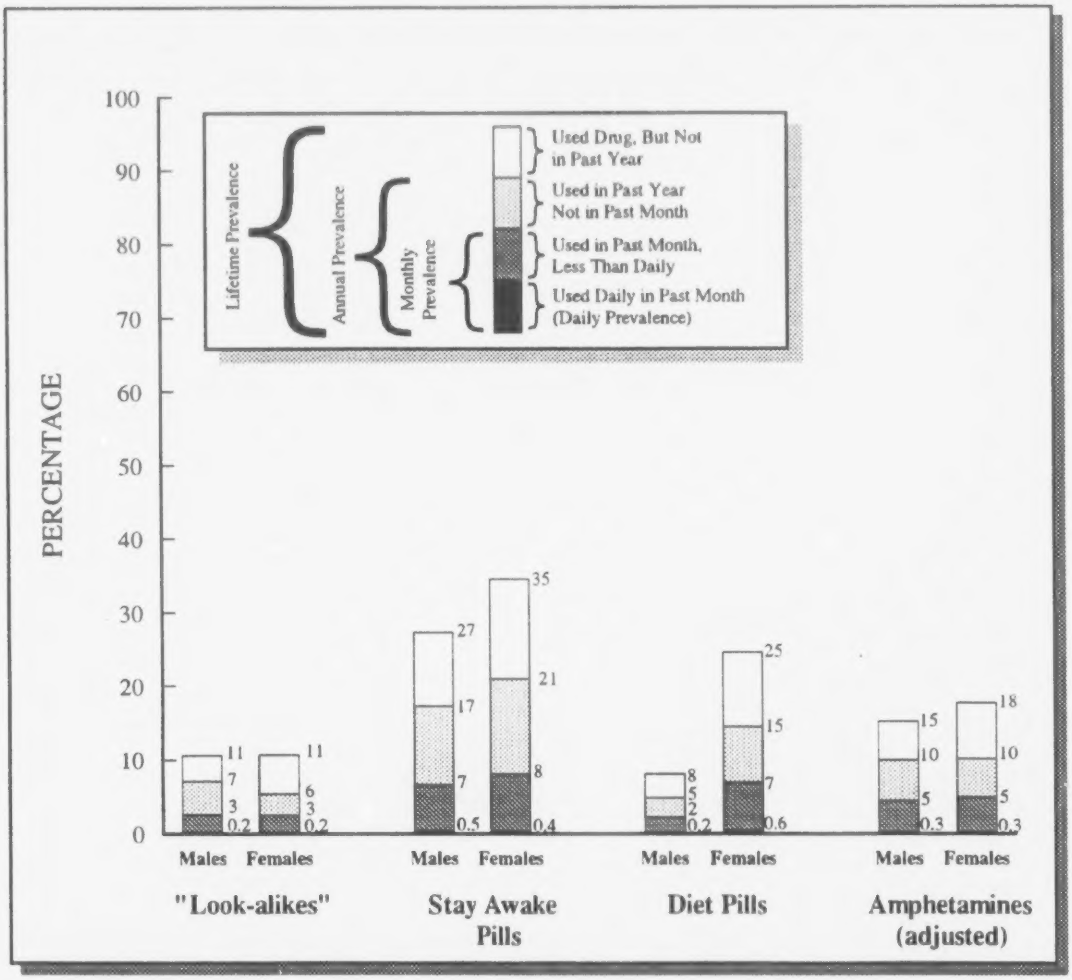
Prevalence	Class of 1982	Class of 1983	Class of 1984	Class of 1985	Class of 1986	Class of 1987	Class of 1988	Class of 1989	Class of 1990	Class of 1991	Class of 1992	Class of 1993	Class of 1994	Class of 1995	Class of 1996	Class of 1997	'96–'97 change
Lifetime																	
Total	15.1	14.8	15.3	14.2	12.7	11.9	11.7	10.5	10.7	8.9	10.1	10.5	10.3	11.6	10.7	10.8	+0.1
Males	13.6	14.2	14.1	14.1	12.3	10.9	10.4	10.1	11.6	8.3	11.0	10.1	9.0	10.8	10.0	10.6	+0.6
Females	15.1	14.4	15.2	13.8	12.6	12.3	12.1	10.2	9.9	8.8	9.3	10.4	11.2	10.6	10.3	10.7	+0.4
Annual																	
Total	10.8	9.4	9.7	8.2	6.9	6.3	5.7	5.6	5.6	5.2	5.4	6.2	6.0	6.8	6.5	6.4	-0.1
Males	9.5	9.2	9.7	8.3	6.5	6.4	4.2	6.1	6.6	4.9	6.2	6.4	5.9	7.0	5.7	7.2	+1.5
Females	10.7	8.6	8.5	7.8	6.7	6.0	6.3	5.0	4.6	4.7	4.5	5.4	5.7	5.4	6.0	5.5	-0.5
Thirty-Day																	
Total	5.6	5.2	4.4	3.6	3.4	2.7	2.7	2.4	2.3	2.1	2.4	2.7	2.4	3.0	3.1	2.7	-0.4
Males	4.0	4.5	4.5	3.8	3.4	2.4	1.7	2.3	2.6	2.0	2.5	2.0	2.5	3.0	2.6	2.7	+0.1
Females	5.2	5.4	3.8	3.1	3.0	2.7	3.0	2.2	1.8	1.8	2.2	2.9	2.0	2.1	2.7	2.6	-0.1

NOTE: Level of significance of difference between the two most recent classes: s = .05, ss = .01, sss = .001.
SOURCE: The Monitoring the Future Study, the University of Michigan.

[a] Data based on one form. Total N for 1982-89 is approximately 3,300. For 1990-97, the total N is approximately 2,600.

FIGURE 10-1

Prevalence and Recency of Use, by Sex
Amphetamines and Non-Prescription Stimulants
Twelfth Graders, 1997



- Based on the data presented earlier in this report, we know that very similar proportions are using actual ***amphetamines***: twelfth graders' self-reported prevalence rates in 1997 were 17% lifetime, 5% monthly, and 0.3% daily use.

- Currently, ***stay-awake pills*** are the most widely used stimulant, with 31% lifetime, 8% monthly, and 0.4% daily prevalence rates.

- Slightly fewer students knowingly used the ***look-alikes*** than used diet pills or amphetamines (adjusted), with 11% lifetime, 3% monthly, and 0.2% daily prevalence rates. Of course, it is probable that some proportion of those who thought they were getting real amphetamines were actually sold look-alikes, which are far cheaper for drug dealers to purchase.

- In 1983, the newly revised question on amphetamine use yielded prevalence estimates that were about one-quarter to one-third lower than those yielded by the original version of the question, indicating that, indeed, some distortion in the unadjusted estimates occurred as a result of respondents including some nonprescription stimulant use. However, we believe that there should be little or no such distortion in recent years, primarily due to the improvement in the questions but also due to the fact that there has been a considerable decline in the use of diet pills and look-alikes, as is discussed below.

Subgroup Differences

- Figure 10-1 shows the prevalence figures for these drug classes for ***males and females*** separately. It can be seen that the use of ***diet pills*** is dramatically higher among females than among males. In fact, the absolute prevalence levels for females are impressively high, 25% reported some experience with them and 7%—or one in every fourteen females—reported use in just the last month. For all other types of stimulants, the prevalence rates for both sexes are fairly close.

- A similar comparison for those who are planning four years of college (referred to here as the "college-bound") and those who are not, has shown some differences as well (data not shown). This year's results show only a slight difference between these two groups in their use of ***stay-awake pills***: the annual prevalence rate is 22% for the noncollege-bound vs. 19% for the college-bound. Use of ***diet pills*** is slightly higher for the noncollege-bound: the annual prevalence is 12% vs. 9% for the college-bound. The use of ***look-alikes*** is twice as high among the noncollege-bound (10% vs. 5%).

- With regard to ***regional differences***, the use of diet pills is highest in the South (12% annual prevalence rate) and lowest in the West (8% annual prevalence rate). For both stay-awake pills and "look-alikes," the

North Central region has the highest prevalence rates and the West has the lowest. The differences between the other regions are minor.

- For all three nonprescription stimulants, the nonmetropolitan areas show the highest rates of use.

- The use of all of the nonprescription stimulants (i.e., ***diet pills***, ***stay-awake pills***, and "***look-alikes***") is substantially higher among those who have used illicit drugs than among those who have not, and it is highest among those who have become most involved with illicit drugs (see Table 10-2). For example, only 2% of twelfth graders who have abstained from any illicit drug use report ever having used a ***look-alike*** stimulant, compared to 8% of those who report having used only marijuana and 28% of those who report having used some illicit drug other than marijuana (usually in addition to marijuana).

Trends in Use Among Seniors

- The questions on amphetamine use were revised in 1982 to eliminate the inappropriate reporting of the use of nonprescription stimulants. It is worth noting that the 1982 figures for the use of ***amphetamines adjusted*** (i.e., excluding the use of nonprescription stimulants) were higher than the unadjusted figures for all years prior to 1980. (See Tables 5-1 through 5-4 in Chapter 5.) This suggests that there was indeed an increase in amphetamine use between 1979 and 1982—or at least an increase in the use of what, to the best of the respondents' knowledge, were amphetamines. Not all of the increase was an artifact. The data presented earlier on the proportion of seniors who were around people using amphetamines to "get high" support this conclusion (see Chapter 9).

- During the 1980s, legislative and law enforcement efforts to curb the manufacture and distribution of ***look-alike pills*** increased. Perhaps as a result, the use of these pills decreased from 1982 to 1991; for example, annual prevalence went from 10.8% in 1982 to 5.2% in 1991. Most of the decline occurred among those who had used illicit drugs other than marijuana—the group primarily involved in the use of "look-alikes." After 1991, use rose a bit but has not changed appreciably since 1995 (Table 10-1c).

- The use of ***diet pills*** also decreased substantially, in this case between 1983 and 1993. Over that interval, annual prevalence fell from 21% to 8%. Nearly all of this decline occurred among the group who had used illicit drugs other than marijuana. Since 1993, use has risen some and is back up to 10% (Table 10-1a).

TABLE 10-2

Percentage of Twelfth Graders in Each Category of an Illicit Drug Use Index Who Have Tried Various Over-the-Counter Stimulants, 1997

(Entries are percentages)

	Lifetime Illicit Drug Use Groupings		
Their lifetime use of . . .	No Use	Used Marijuana Only	Used Other Illicit Drugs
Diet Pills	8.8[a]	12.5	33.9
Stay-Awake Pills	14.2	34.8	56.5
"Look-Alikes"	2.2	7.8	28.1
Approx. N =	*1,100*	*600*	*700*

SOURCE: The Monitoring the Future Study, the University of Michigan.

[a] This means that, of those who have never used an illicit drug, 8.8 percent have used a diet pill at least once.

- Unlike the use of other nonprescription stimulants, the use of ***stay-awake pills*** increased significantly in the early to mid-1980s. The annual prevalence of use increased from 12% in 1982 to 26% in 1988, and then it dropped back somewhat, to 19% by 1993. (Both the increase and decrease occurred primarily among those who had used illicit drugs.) By 1997, use had risen very slightly, to 20% (Table 10-1b).

- All subgroups (defined by sex, college plans, region of the country, and population size) showed similarly large increases from 1982 to 1988 in their use of ***stay-awake pills***. All subgroups' annual prevalence of use decreased between 1988 and 1992, though there was rather little decrease in the North Central region. Since 1992, use has stabilized in virtually all subgroups.

- Subgroup differences in trends in the use of ***diet pills***, for the most part, reflect the overall trends.

- Subgroup differences in trends in the use of ***look-alikes*** also generally reflect the overall trends.

THE USE OF MARIJUANA ON A DAILY BASIS

In past reports in this series, we summarized a number of findings regarding daily marijuana users, including what kind of people they are, how use changes after high school for different subgroups, and what daily users see as the negative consequences of their use.[52] In 1982, a special question segment was introduced in one twelfth-grade questionnaire form to secure more detailed measurement of individual patterns of daily marijuana use. More specifically, respondents were asked (a) whether at any time during their lives they had ever used marijuana on a daily or near-daily basis for at least a month and, if so, (b) how recently they had done that, (c) when they first had done that, and (d) how many total months they had smoked marijuana daily, cumulating over their whole lifetime. The results of our analyses of the data follow.

Lifetime Prevalence of Daily Marijuana Use Among Seniors

- ***Current daily marijuana use***, defined as use on 20 or more occasions in the past 30 days, has fluctuated widely since the study began, as we know from the trend data presented earlier in this report. Among twelfth-grade respondents, it rose from 6.0% in 1975 to 10.7% in 1978, declined to 1.9% by 1992, and then began to increase again. By 1997, it had risen to 5.8%, the highest prevalence rate since 1982.

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[52] For the original reports see the following, which are available from the author: Johnston, L.D. (1981). Frequent marijuana use: Correlates, possible effects, and reasons for using and quitting. In R. DeSilva, R. Dupont, & G. Russell (Eds.), *Treating the marijuana dependent person*, New York: The American Council on Marijuana. Also see Johnston, L.D. (1982). A review and analysis of recent changes in marijuana use by American young people. In *Marijuana: The national impact on education*, New York: The American Council on Marijuana.

TABLE 10-3

Daily Marijuana Use: Responses to Selected Questions by Subgroups Twelfth Graders, 1997

	Total	Sex		4-Year College Plans		Region				Population Density		
		Male	Female	No	Yes	North East	North Central	South	West	Large MSA	Other MSA	Non-MSA
Q. *Thinking back over your whole life, has there ever been a period when you used marijuana or hashish on a daily, or almost daily, basis for at least a month?*												
No	81.2	80.4	84.8	77.4	85.1	75.4	83.5	85.1	77.0	81.2	79.9	83.8
Yes	18.8	19.7	15.2	22.6	14.9	24.6	16.5	14.9	23.0	18.8	20.1	16.2
Q. *How old were you when you first smoked marijuana or hashish that frequently?*												
Grade 6 or earlier	1.2	1.0	0.7	1.5	0.7	2.1	1.4	0.6	1.0	0.5	1.5	1.3
Grade 7 or 8	3.7	3.8	2.9	3.7	3.4	4.8	3.3	3.0	4.3	4.0	3.4	4.1
Grade 9 (Freshman)	4.8	4.8	4.5	5.8	3.8	6.4	3.5	3.9	7.0	5.5	4.9	4.0
Grade 10 (Sophomore)	5.1	5.7	3.7	6.2	4.2	6.9	3.9	3.6	7.2	5.3	5.6	3.7
Grade 11 (Junior)	2.9	3.4	2.2	3.6	2.1	3.0	3.0	2.9	2.6	2.3	3.3	2.6
Grade 12 (Senior)	1.1	1.0	1.2	1.8	0.8	1.4	1.4	0.9	0.8	1.2	1.4	0.6
Never used daily	81.2	80.4	84.8	77.4	85.1	75.4	83.5	85.1	77.0	81.2	79.9	83.8
Q. *How recently did you use marijuana or hashish on a daily, or almost daily, basis for at least a month?*												
During the past month	4.9	6.4	2.5	5.2	3.8	5.0	4.4	4.5	6.5	3.5	5.9	4.5
2 months ago	1.8	2.3	0.7	2.2	1.2	2.1	1.6	2.1	1.5	1.6	1.9	2.0
3 to 9 months ago	3.7	3.4	3.6	5.4	2.8	5.8	3.5	2.3	3.9	4.5	4.0	2.0
About 1 year ago	3.2	3.1	3.0	5.8	2.1	4.6	2.8	2.2	4.1	4.0	3.0	2.8
About 2 years ago	3.2	2.9	3.8	2.5	3.4	4.5	2.7	2.1	4.7	3.7	2.9	3.3
3 or more years ago	1.9	1.6	1.7	1.5	1.5	2.6	1.5	1.8	2.3	1.4	2.3	1.7
Never used daily	81.2	80.4	84.8	77.4	85.1	75.4	83.5	85.1	77.0	81.2	79.9	83.8
Q. *Over your whole lifetime, during how many months have you used marijuana or hashish on a daily or near-daily basis?*												
Less than 3 months	5.5	6.3	5.0	6.4	5.2	7.3	4.7	4.5	6.8	5.3	5.7	5.5
3 to 9 months	4.3	3.7	4.1	5.4	3.2	4.9	4.2	3.5	5.4	4.7	4.6	3.3
About 1 year	2.3	2.4	2.1	2.3	2.1	2.0	1.0	3.2	2.8	2.5	2.0	2.6
About 1 and 1/2 years	1.6	1.2	1.8	2.8	1.2	2.0	1.2	1.3	2.3	1.9	1.8	1.2
About 2 years	2.2	2.3	0.9	2.2	1.3	3.2	2.0	1.1	3.2	2.4	2.7	0.8
About 3 to 5 years	2.2	2.8	1.1	1.8	1.7	4.2	2.0	1.2	2.1	1.6	2.9	1.4
6 or more years	0.8	0.9	0.2	1.7	0.2	0.9	1.4	0.2	0.4	0.5	0.5	1.4
Never used daily	81.2	80.4	84.8	77.4	85.1	75.4	83.5	85.1	77.0	81.2	79.9	83.8
N =	*2560*	*1106*	*1260*	*463*	*1760*	*526*	*702*	*872*	*460*	*687*	*1238*	*635*

NOTE: Entries are percentages that sum vertically to 100 percent.
SOURCE: The Monitoring the Future Study, the University of Michigan.

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- Since 1982, we have found the ***lifetime prevalence of daily marijuana use for a month or more*** to be far higher than current daily marijuana use—e.g., at 18.8% in 1997 (almost one in every five seniors) vs. 5.8% for current daily use. In other words, the proportion who described themselves as having been daily or near-daily users at some time in their lives is three to four times as high as the number who described themselves as current daily users. (However, we believe it very likely that this ratio has changed dramatically over the life of the study as a result of the large secular trends in daily use. Therefore, it would be inaccurate to extrapolate to the class of 1978, for example, and deduce that their lifetime prevalence of daily use was three times their 10.7% current use figure for that year. An investigation of data from a follow-up panel of the class of 1978 confirms this assertion.)

- Utilizing data collected in 1989 from follow-up panels from the earlier graduating classes of 1976 through 1988 combined, we found that the lifetime prevalence of daily marijuana use for these graduates (ranging in age from about 19 to 31) was 20%. Approximately one-fourth of the older portion of that group—graduates from the classes of 1976 through 1979—indicated having been daily marijuana users for a month or more at some time in their lives.

Grade of First Daily Marijuana Use

- Of the 1997 seniors who reported being daily marijuana users at some time in their lives (i.e., 18.8% of the sample), over half (52% of all daily users, or 9.7% of all seniors) began that pattern of use *before* tenth grade. We are confident that different graduating classes show different age-associated patterns of onset, depending on the secular trends and, to a lesser degree, cohort effects. The percentages of all seniors who started daily marijuana use in each grade level are presented in Table 10-3.

Recency of Daily Marijuana Use by Seniors

- Almost three-fourths (72%) of those twelfth graders who reported *ever* having been daily marijuana users (for at least a one-month interval) have used that frequently in the past year. About one-quarter (27%) of them said they last used that frequently "about two years ago" or longer.

- One-quarter (26%) of all seniors who said they have ever been daily users for a month or more (4.9% of the entire sample) classified themselves as having used daily or almost daily "during the past month." Our operational definition of current daily users on the standard prevalence and frequency of use questions—20 or more uses in the last 30 days—yields a 5.8% rate in 1997, close to the 4.9% rate based on the respondents' own definition. In fact, these two rates generally have been quite close across the years.

Duration of Daily Marijuana Use by Seniors

- It seems likely that the most serious long-term health consequences associated with marijuana use will be directly related to the duration of heavy use, and in the late 1970s there was considerable concern that a large population of chronic heavy users would evolve. Thus, a question was introduced that asks respondents to estimate the *cumulative* number of months they have smoked marijuana daily or nearly daily. While hardly an adequate measure of the many different possible cross-time patterns of use—it may eventually prove to be important to distinguish among a number of these patterns—it does provide a gross measure of the total length of exposure to heavy use.

- Table 10-3 gives the distribution of answers to this question. It shows that of the 18.8% of 1997 seniors with any daily marijuana use experience lasting a month or more, roughly two-thirds (64%) reported that their period(s) of daily use totaled "about one year" or less. Nearly one-third (29%) used less than three months cumulatively. More than one-fifth (28%, or 5.2% of *all* seniors) used marijuana daily "about two years" or more cumulatively.

Subgroup Differences

- There is some ***sex difference*** in the proportion having ever been a daily user (19.7% for males and 15.2% for females) and the cumulative duration of daily use is somewhat longer for males. (The sex differences have been larger in many previous years.)

- Whether or not the student has ***college plans*** is strongly related to lifetime prevalence of daily marijuana use, as well as to current prevalence. Of those planning four years of college, 14.9% had used daily compared with 22.6% of those without such plans. And the college-bound users show a distinctly shorter cumulative duration of use, with a lower proportion of them having used daily during the past month. Among those in each group who did use daily, the age-at-onset pattern is younger for the noncollege bound (Table 10-3).

- At present there are some ***regional differences*** in lifetime prevalence of daily marijuana use. The Northeast and West have the highest rates (at 25% and 23%, respectively), and the North Central and South have considerably lower ones (17% and 15%, respectively).

- The differences in lifetime daily use associated with ***urbanicity*** are modest (as is true for current daily use). Lifetime prevalence of daily marijuana use is 18.8% in the large cities, 20.1% in the smaller cities, and 16.2% in the nonurban areas. Current daily use is 3.5% in the large cities, 5.9% in the smaller cities, and 4.5% in the nonurban areas.

TABLE 10-4a

Trends in Daily Use of Marijuana in Lifetime by Subgroups, Twelfth Graders[a]

Percent ever using daily for at least a month

	Class of 1982	Class of 1983	Class of 1984	Class of 1985	Class of 1986	Class of 1987	Class of 1988	Class of 1989	Class of 1990	Class of 1991	Class of 1992	Class of 1993	Class of 1994	Class of 1995	Class of 1996	Class of 1997	'96–'97 change
All seniors	20.5	16.8	16.3	15.6	14.9	14.7	12.8	11.5	10.0	9.0	8.4	9.6	11.3	12.1	15.7	18.8	+3.1s
Sex:																	
Male	20.1	18.1	17.2	17.7	16.6	16.2	14.8	12.7	10.6	10.5	8.3	10.7	13.3	12.9	18.7	19.7	+1.0
Female	18.0	13.5	12.9	12.0	11.6	12.2	9.6	9.7	7.9	6.4	7.5	7.2	8.5	7.9	10.7	15.2	+4.5ss
College Plans:																	
None or under 4 yrs.	22.5	20.3	18.9	19.6	17.2	18.0	14.5	15.3	12.8	11.5	11.2	11.6	16.1	14.2	21.5	22.6	+1.1
Complete 4 yrs.	13.8	10.5	10.7	10.6	11.0	11.1	9.8	9.1	7.4	6.5	5.9	7.7	8.6	9.2	11.9	14.9	+3.0s
Region:																	
Northeast	25.1	20.4	24.1	20.9	21.5	17.0	13.1	14.6	10.4	10.3	8.7	12.0	12.2	12.8	21.3	24.6	+3.3
North Central	21.1	15.9	12.8	16.3	11.3	12.7	10.3	13.4	10.8	8.4	8.0	9.3	11.0	13.6	14.6	16.5	+1.9
South	15.7	12.7	14.0	8.9	11.3	11.9	10.9	8.1	8.7	7.4	5.9	8.3	11.8	11.2	12.7	14.9	+2.2
West	20.8	21.4	17.6	18.5	18.3	19.7	19.0	12.3	11.0	11.3	13.4	10.4	10.2	10.6	17.0	23.0	+6.0
Population Density:																	
Large MSA	23.8	20.0	19.4	18.1	17.0	16.7	14.0	10.6	8.3	7.2	8.4	8.6	10.3	13.9	15.3	18.8	+3.5
Other MSA	20.3	18.2	16.6	16.0	14.9	15.0	14.9	12.4	11.7	11.1	8.9	10.2	13.6	11.3	18.2	20.1	+1.9
Non-MSA	17.9	12.6	13.2	12.8	13.2	12.2	7.6	10.4	8.2	7.1	7.6	9.6	8.4	11.2	11.6	16.2	+4.6

NOTE: Level of significance of difference between the two most recent classes: s = .05, ss = .01, sss = .001.
SOURCE: The Monitoring the Future Study, the University of Michigan.

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[a] Data based on one form. The total N for 1982-89 is approximately 3,300. For 1990-97, the total N is approximately 2,600.

TABLE 10-4b

Trends in Daily Use of Marijuana Prior to Tenth Grade by Subgroups, Twelfth Graders[a]

	Percent reporting first such use prior to tenth grade																
	Class of 1982	Class of 1983	Class of 1984	Class of 1985	Class of 1986	Class of 1987	Class of 1988	Class of 1989	Class of 1990	Class of 1991	Class of 1992	Class of 1993	Class of 1994	Class of 1995	Class of 1996	Class of 1997	'96–'97 change
All seniors	13.1	11.1	10.9	8.8	8.5	8.9	7.8	7.6	6.7	6.4	5.6	5.2	5.5	5.5	7.8	9.7	+1.9
Sex:																	
Male	12.9	12.1	11.8	9.8	8.7	10.2	8.4	8.4	6.9	7.4	5.6	5.5	6.1	5.8	9.6	9.6	0.0
Female	11.5	8.3	8.0	6.5	6.6	7.1	6.6	6.0	4.9	4.4	5.0	4.1	4.4	3.4	4.9	8.1	+3.2s
College Plans:																	
None or under 4 yrs.	14.2	13.5	12.3	11.8	10.7	11.4	11.0	11.6	9.0	8.7	7.8	6.3	6.7	6.7	11.0	11.0	0.0
Complete 4 yrs.	8.2	6.5	6.6	5.5	5.2	6.4	5.3	5.1	4.6	4.3	3.8	4.2	4.4	4.2	5.8	7.9	+2.1
Region:																	
Northeast	17.3	11.9	17.2	12.9	10.3	10.3	9.0	10.7	6.5	8.2	4.8	6.3	5.2	6.6	8.3	13.3	+5.0s
North Central	13.3	12.4	8.4	9.1	7.3	7.7	6.0	7.6	6.7	4.9	4.7	5.5	5.8	6.2	8.9	8.2	-0.7
South	9.3	8.3	8.5	5.0	6.4	7.4	6.3	5.4	6.2	5.1	4.4	4.3	6.6	4.5	5.8	7.5	+1.7
West	12.6	13.9	12.1	8.9	11.2	11.7	11.9	8.1	8.0	8.6	9.8	5.1	3.2	5.0	10.1	12.3	+2.2
Population Density:																	
Large MSA	15.6	13.7	12.4	12.0	9.6	11.8	8.1	6.0	5.9	5.4	5.7	5.5	4.6	6.0	9.2	10.0	+0.8
Other MSA	12.5	12.0	11.5	8.3	8.4	8.8	9.6	8.1	8.1	7.7	5.8	5.3	6.9	5.5	8.3	9.8	+1.5
Non-MSA	11.7	8.2	8.5	6.6	7.6	6.4	4.3	7.6	4.3	5.3	5.3	4.8	4.2	4.8	5.6	9.4	+3.8s

NOTE: Level of significance of difference between the two most recent classes: s = .05, ss = .01, sss = .001.
SOURCE: The Monitoring the Future Study, the University of Michigan.

[a] Data based on one form. The total N for 1982-89 is approximately 3,300. For 1990-97, the total N is approximately 2,600.

Trends in Use of Marijuana on a Daily Basis

- Table 10-4a presents trend data on the lifetime prevalence of daily use for a month or more. It shows a decline from 1982, when this measure was first used, through 1992—from 21% to 8%. By 1997 it had risen substantially to 18.8%.

- Between 1982 and 1992, the decline in lifetime prevalence of ***daily marijuana*** use was slightly stronger among males (from 20% to 8%) than among females (from 18% to 8%); the absolute drop was larger among the noncollege-bound (23% to 11%) than among the college-bound (14% to 6%), although the proportional drop was not. In the turnaround that began in 1993, most of the increase appears to have occurred among the males, who are now back to 20%, and the noncollege-bound, who are now back to 23%. In 1997, there were large increases among females (up 4.5 percentage points) and the college-bound (up 3.0 percentage points), tending to narrow the gaps between the sexes and between the college-bound and the noncollege-bound, once again.

- Lifetime prevalence of daily marijuana use had dropped in all four regions of the country. Between 1982 and 1992, it dropped in the Northeast, North Central, and South, and between 1982 and 1990, it dropped in the West. The decline was greatest in the Northeast, where it dropped from 25% in 1982 to 9% in 1992. The current daily use measure shows the recent turnaround occurring in all regions since 1991 or 1992, with steady increases through 1997.

- All three population density levels exhibited long-term declines in lifetime daily use from 1982 to 1992, and all have shown an increase since then.

- Daily prevalence of use prior to tenth grade declined from 13% in the class of 1982 to 5% in the class of 1993. (This corresponds to people who were ninth graders between 1979 and 1990.) The decline in earlier use halted among the twelfth graders surveyed in 1993 and prevalence then began to climb. Subgroup trends may be examined in Table 10-4b.

RELATING DRUG USE AND OTHER DEVIANCE TO ROUTINE ACTIVITIES

In a theoretical article we extended the situational explanations of crime found in the routine activities perspective to explaining individual offending and a broader range of deviant behaviors.[53] Specifically, situations conducive to deviance are especially prevalent in unstructured socializing activities with peers that occur in the absence of authority figures. The analyses used longitudinal panel data from Monitoring the Future respondents aged 18 through 26. The results showed consistent evidence that socializing with peers away from home and authority figures was closely related to deviant behavior, but only in the absence of a structuring agenda such as going on a date, going to a movie, or participating inn sports. Participation in certain routine activities was strongly associated with use of marijuana and other illicit drugs, heavy alcohol use, criminal behavior, and dangerous driving. These routine activities included time spent riding in a car for fun, visiting with friends, going to parties, and spending evenings out of their parents' home. Furthermore, routing activities accounted for a substantial portion of the association between these deviant behaviors and age, gender, and socioeconomic status.

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[53] Osgood, D.W. Wilson, J.K., O'Malley, P.M., Bachman, J.G., & Johnston, L.D. (1996). Routine activities and individual deviant behaviors. *American Sociological Review, 61*, 635-655.

RECANTING SELF-REPORTED DRUG USE

A recently published chapter addresses several research questions[54]: 1) to what extend do young adults recant earlier reported drug use in subsequent follow-up surveys, 2) to what extent does such recanting vary by type of drug and type of respondent, and 3) to what extent do the findings have implications for interpreting prevalence rates for cross-sectional studies of adults?

For certain of the drugs—a relatively low level of recanting of earlier-reported use was found, even over a fourteen year interval. This suggests that there is relatively little erosion in truth-telling with age, even as people are well along in their career paths and in family formation. It also suggests that gathering data in the home setting by means of a mailed questionnaire is a reasonable approach for this age group. It does, however, suggest that there may be some increase with age in concealment, and that age comparisons in cross-sectional studies of the general population likely will reflect such a bias.

For the two psychotherapeutic drugs examined, the recanting rates were larger in both absolute and proportional terms. Because the use of these drugs is generally seen as no more deviant than the use of the illegal drugs (as indicated by the disapproval rates for the various drugs), one would assume no greater motivation to conceal because of the threat of exposure. An alternative explanation, favored by the authors, is that the definitions of these classes of substance are much less clear to the respondents. In particular, there are non-prescription substances such as over-the-counter sleep aids and diet aids, as well as mail order "look-alike" drugs which often go by the same slang terms as the prescription drug about which the questions are intended to ask. That fact raises a possibility that young respondents—particularly when still in high school—may be over-inclusive in their earlier answers regarding drug classes such as tranquilizers and barbiturates. By subsequently recanting some of their overly inclusive answers, perhaps based on a better understanding of the intended distinctions, they may actually be providing more accurate data in their subsequent responses. (This interpretation is supported by the fact that for these two drugs, much of the recanting seems to involve recanting use originally reported in high school.) In fact, the particular cohorts examined might show such an effect in particular, since the distribution and use of "look-alikes" peaked around the late 1970s and early 1980s. Further, the question wording was revised subsequently to emphasize that only respondents' use of prescription substances should be included in the answers. To the extent the re-wording had an effect, subsequent cohorts to the ones studied here may show less such recanting. Still, the drug definitions are difficult ones for the psychotherapeutics, and to the extent that the authors' hypothesis is true—namely, that young respondents tend to be overly inclusive in reporting the use of these drugs—researchers surveying adolescents should be sensitized to the possibility that their prevalence estimates may be high for these drugs. The authors hypothesize further that the problem increases as one moves down the age spectrum where respondents are less able to make some of the fine distinctions the researchers are attempting to get them to make. In fact, it is because of concerns such as these that we do not even report the prevalence rates for barbiturates and for narcotics other than heroin obtained from eighth and tenth grade respondents.

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[54] Johnston, L.D., & O'Malley, P.M. (1997). The recanting of earlier-reported drug use by young adults. In L. Harrison & A. Hughes (Eds.), *The Validity of Self-Reported Drug Use: Improving the Accuracy of Survey Estimates*. (NIDA Research Monograph 167), pp. 59-80. NIH Publication No. 97-4147. Washington, D.C.: National Institute on Drug Abuse.

Subgroup differences. The rate of recanting is not much affected by the composition of the household setting in which the respondent receives his or her questionnaire. This is reassuring in many ways. In particular, it suggests that declines in use associated with getting married, or increases in use associated with leaving the parental home, are not methodological artifacts. Both such changes have previously been reported from the panel data from this study.[55]

It also should be reassuring to investigators in the field that recanting was not strongly associated with most of the other variables assessed, since that means that relationships between drug use and such variables examined in cross-sectional surveys of adults, probably are not biased by such a methodological artifact.

Two exceptions give reason for some concern, however. If African American respondents do tend to deny past use more than whites, than racial comparison in cross-sectional surveys of adults may need some adjustments. And, the higher than average recanting rates for those in military and police/firefighting occupational settings also provide a caution about how literally one takes survey data gathered from such populations. The data on these two groups can only be taken as suggestive at this point, given the small subgroup sample sizes. They are, however, consistent with the hypothesis that people in these settings would have the most to lose if drug use were revealed, and, therefore, would be more likely than average to conceal use.

- Overall, recanting rates tend to be modest for the illegal drugs but less so for the psychotherapeutic drugs. This suggests that concealment effects are not strong, but that ambiguity in the definition of certain drug classes (which clearly is highest for the psychotherapeutic drugs) does lead to a modest amount of recanting. The "revised" answers may well be the more accurate ones, however; and the answers given at earlier ages for the psychotherapeutic classes of drugs may well be inflated. In general, differences in recanting rates among subgroups are not large. Among the largest are the rates for African Americans recanting earlier reported marijuana and cocaine use (but not the use of the other three drugs), and rates for those young adults who are in the military or in police or firefighting occupations to recant more than the other occupational groups.

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[55] Bachman, J.G., O'Malley, P.M., & Johnston, L.D. (1984). Drug use among young adults: The impacts of role status and social environments. *Journal of Personality and Social Psychology*, 47:629-645.

OTHER DATA ON CORRELATES AND TRENDS

Hundreds of correlates of drug use, without accompanying interpretation, may be found in the series of annual volumes from the study entitled *Monitoring the Future: Questionnaire Responses from the Nation's High School Seniors.*[56] For each year since 1975, a separate hardbound volume presents univariate and selected bivariate distributions on all questions contained in the study. A host of variables dealing explicitly with drugs—many of them not covered here—are contained in that series. Bivariate tables are provided for *all* questions each year distributed against an index of lifetime illicit drug involvement, making it possible to examine the relationships between hundreds of potential "risk factors" and drug use.

A special cross-time reference index is contained in each volume to facilitate locating the same question across different years. One can thus derive *trend* data on some 1,500 to 2,000 variables for the entire sample or for important subgroups (based on sex, race, region, college plans, and drug involvement).

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[56] This series is available from the Monitoring the Future Project, Institute for Social Research, The University of Michigan, Ann Arbor, Michigan 48109.

Appendix A

PREVALENCE AND TREND ESTIMATES ADJUSTED FOR ABSENTEES AND DROPOUTS

One question which has arisen over the years in regard to this study concerns the degree to which the prevalence and trend estimates derived from twelfth graders are an accurate reflection of the reality which pertains to all young people who would be in the same class or age cohort, including those who have dropped out of school by senior year. In 1985 we published an extensive chapter on this topic in a volume in the NIDA Research Monograph series.[57] We will attempt in this Appendix to summarize the main points relevant to this issue of sample coverage.

First, it should be noted that two segments of the entire class/age cohort are missing from the data collected each year from seniors: those who are still enrolled in school but who are absent the day of data collection (the "absentees") and those who will not graduate from high school (the dropouts). The absentees constitute virtually all of the nonrespondents shown in the response rate given in Table 3-1 in Chapter 3 of this volume (since refusal rates are negligible) or about 18% of all seniors (or 15% of the class/age cohort). Based on our review of available Census data, dropouts account for approximately 15% of the class/age cohort.

The methods we used to estimate the prevalence rates for these two missing segments are summarized briefly here. Then, the effects of adding in these two segments to the calculation of the overall prevalence rates for two drug classes are presented along with the impact on the trend estimates. Two illicit drugs have been chosen for illustrative purposes: marijuana, the most prevalent of the illicit drugs, and cocaine, one of the more dangerous and less prevalent drugs. Estimates for high school seniors are presented for both lifetime and 30-day prevalence for each drug.

CORRECTIONS FOR LOWER GRADE LEVELS

Before estimates of corrections for seniors are discussed, it should be noted that the twelfth grade represents the "worst case" in terms of underestimation. Rates of both dropping out and absenteeism are lower for eighth and tenth grades than for twelfth grade. With respect to dropping out, only a very few members of an age cohort have ceased attending school by grade eight, when most are age 13 or 14. Most tenth graders are age 15 or 16, and Census data indicate that only a small proportion (less than 5%) would have dropped out by then.[58] Thus, any correction for the missing dropouts should be negligible at eighth grade, and quite small at tenth grade.

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[57] Johnston, L.D., & O'Malley, P.M. (1985). Issues of validity and population coverage in student surveys of drug use. In B.A. Rouse, N.J. Casual, & L.G. Richards (Eds.), *Self-report methods of estimating drug use: Meeting current challenges to validity* (NIDA Research Monograph No. 57 (ADM) 85-1402). Washington, DC: U.S. Government Printing Office.

[58] According to the *Statistical Abstract of the United States 1994*, in 1992 the proportion of the civilian non-institutionalized population of the United States enrolled in school is 99.4% among 7-13 year olds and 99.1% among 14-15 year olds. It drops to 94.1% for 16-17 year olds combined, but there is probably a considerable difference between age 16 and age 17. Eighth graders in the spring of the school year are mostly (and about equally) 13-14 years old; while tenth graders are mostly (and about equally) 15 and 16 years old. These data, then, would suggest that dropouts are no more than 0.8% of eighth graders and 4.0% of tenth graders. U.S. Department of Commerce. (1994). *Statistical Abstract of the United States 1994: The National Data Book*. (114th Ed.) Washington, D.C.: Bureau of the Census. (p. 155)

Regarding absentees, Table 3-1, presented earlier, shows that while absentees comprise 17% of the twelfth graders who should be in school, they comprise only 14% of tenth graders and 11% of eighth graders in 1997. Thus, the eighth- and tenth-grade change in prevalence estimates which would result from corrections for this missing segment also would be considerably less than for twelfth graders.

In sum, the modest corrections which will result from the corrections for dropouts and absentees at the twelfth grade level set outer limits for what would be found at eighth and tenth grade; in fact, it is clear that the corrections would be considerably smaller at tenth grade and far smaller at eighth grade. Since the corrections described for twelfth graders turn out to be modest ones, we have not undertaken comparable corrections for eighth and tenth graders.

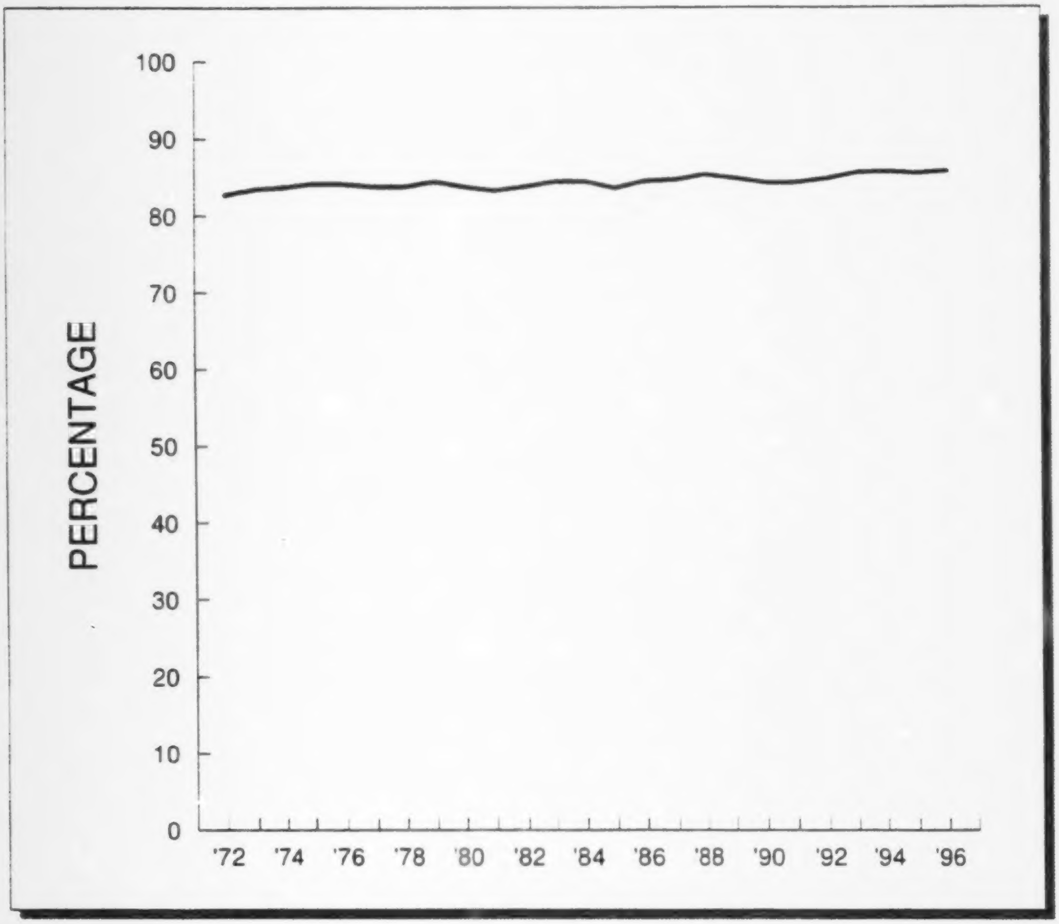
THE EFFECTS OF MISSING ABSENTEES

To be able to assess the effects of excluding absentees on the estimates of twelfth grade drug use, we included a question in the study which asks students how many days of school they had missed in the previous four weeks. Using this variable, we can place individuals into different strata as a function of how often they tend to be absent. For example, all students who had been absent 50% of the time could form one stratum. Assuming that absence on the day of the administration is a fairly random event, we can use the actual survey participants in this stratum to represent all students in their stratum, including the ones who happen to be absent that particular day. By giving them a double weight, they can be used to represent both themselves and the other 50% of their stratum who were absent that day. Those who say they were in school only one-third of the time would get a weight of three to represent themselves plus the two-thirds in their stratum who were not there, and so forth. Using this method, we found that absentees as a group have appreciably higher than average usage levels for all licit and illicit drugs. However, looking at 1983 data, we found that their omission did not depress any of the prevalence estimates in any of the drugs by more than 2.7 percentage points, because they represent such a small proportion of the total target sample. Considering that a substantial proportion of those who are absent likely are absent for reasons unrelated to drug use—such as illness and participation in extracurricular activities—it may be surprising to see even these differences. In any case, from the point of view of policy or public perceptions, the small "corrections" would appear to be of little or no significance. (The correction in 1983 across all 13 drugs in lifetime prevalence averaged only 1.4 percentage points.) Further, such corrections should have virtually no effect on cross-time trend estimates unless the rate of absenteeism was changing appreciably; and we find no evidence in our data that it has. Put another way, the presence of a slight underestimate which is constant across time should not influence trend results. Should absentee rates start changing, then it might be argued that such corrections should be presented routinely.

FIGURE A-1

High School Completion by Persons 20-24 Years Old, 1972-1996

U.S. Population



Source: U.S. Bureau of the Census, Current Populations Survey, published and unpublished data; and 1980 Census.

THE EFFECTS OF MISSING DROPOUTS

Unfortunately, we cannot derive corrections from data gathered from seniors to impute directly the prevalence rates for dropouts, as we did for absentees, since we have no completely appropriate stratum from which we have sampled. We believe, based on our own previous research, as well as the work of others, that dropouts generally have prevalence rates for all classes of drugs substantially higher than the in-school students. In fact, the dropouts may be fairly similar to the absentees.

We have consistently estimated the proportion who fail to complete high school to be approximately 15%; Figure A-1 displays the high school completion rate for the years 1972 through 1997 based on Census data. As the figure indicates, completion rates (and the complement, dropout rates) have been quite constant over this interval for persons 20-24 years old.[59] (Younger age brackets are more difficult to use because they include some young people who are still enrolled in high school.) Monitoring the Future probably covers some small proportion of the 15%, since the survey of seniors takes place a few months before graduation, and not everyone will graduate. On the other hand, perhaps 1% to 2% of the age group which Census shows as having a diploma get it through a General Equivalency Degree and thus would not be covered in Monitoring the Future. (Elliott and Voss reported this result for less than 2% of their sample in their follow-up study of 2617 ninth graders in California who were followed through their high school years.[60]) So these two factors probably cancel each other out. Thus, we use 15% as our estimate of the proportion of a class cohort not covered.

Extrapolating to dropouts from absentees. To estimate the drug usage prevalence rates for this group we have used two quite different approaches. The first was based on extrapolations from seniors participating in this study. Using this method we developed estimates under three different assumptions: that the difference between dropouts and the participating seniors in the study was equivalent to (a) the difference between absentees and the participating seniors, (b) one and one-half times that difference, and (c) twice that difference. The last assumption we would consider a rather extreme one.

The second general method involved using the best national data then available on drug use among dropouts—namely the National Household Surveys on Drug Abuse (NHSDA).[61] While these surveys have rather small samples of dropouts in the relevant age range in any given year, they should at least provide unbiased estimates for dropouts still in the household population.

Using the first assumption—that dropouts are just like absentees—we found that no prevalence rate was changed by more than 5 percentage points over the estimate based on 1983 seniors only, even with the simultaneous correction for both absentees and dropouts. (The method for calculating prevalence rates for the absentees is the one described in the previous section.) The largest correction in 1983 involved marijuana, with lifetime prevalence rising from just under

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[59] U.S. Bureau of the Census (various years). *Current population reports. Series P-20*, various numbers. Washington, DC: U.S. Government Printing Office.

[60] Elliott, D., & Voss, H.L. (1974). *Delinquency and dropout*. Lexington, MA: D.C. Heath-Lexington Books.

[61] Fishburne, P.M., Abelson, H.I., & Cisin, I. (1980). *National survey on drug abuse: Main findings, 1979* (NIDA (ADM) 80-976). Washington, DC: U.S. Government Printing Office; Miller, J.D., et al., (1983). *National survey on drug abuse: Main findings, 1982* (NIDA (ADM) 83-1263). Washington, DC: U.S. Government Printing Office. See also Substance Abuse and Mental Health Services Administration. (1995). *National Household Survey on Drug Abuse: Main Findings 1992*. (DHHS Publication No. (SMA) 94-3012). Rockville, MD: Substance Abuse and Mental Health Services Administration.

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60% to 64%. Even under the most extreme assumption—which results in exceptionally high prevalence rates for dropouts on all drugs, for example 90% lifetime prevalence for marijuana—the overall correction in any of the prevalence figures for any drug remained less than 7.5 percentage points. Again, marijuana showed the biggest correction (7.5% in annual prevalence, raising it from 46% uncorrected to 54% with corrections for both absentees and dropouts). As we would have expected, the biggest *proportional* change occurred for heroin, since it represents the most deviant end of the drug-using spectrum and thus usually would be most associated with truancy and dropping out.

Extrapolating from the household surveys. The second method of estimating drug use among dropouts was by comparing the household survey data on dropouts with the data from those remaining in school. We originally conducted secondary analyses of the archived data from the 1977 and 1979 National Household Surveys (NHSDA). (Analyses using more recent NHSDA data are shown in the next section.) Analyses were restricted to the age range 17 to 19 years old, since about 95% of the Monitoring the Future seniors fall in this range. Of course, the number of cases is small. In the 1977 NHSDA survey there were only 46 dropouts and 175 enrolled seniors in this age group. In the 1979 survey 92 dropouts and 266 seniors were included.

For marijuana, the estimated differences from the household survey data came out at a level which was at or below the *least* extreme assumption made in the previous method (where dropouts are assumed to have the same drug use levels as absentees). While comforting to the authors of the present report, we must admit that we believe these household samples under represented the more drug-prone dropouts to some degree. Thus we concluded that estimates closer to those made under the second assumption in the previous method may be closer to reality—that is, that dropouts are likely to deviate from participating seniors by one and one-half times the amount that absentees deviate from them.

We should note that there are a number of reasons for dropping out, many of which bear no relationship to drug use, including economic hardship in the family and certain learning disabilities and health problems. At the national level, the extreme groups such as those in jail or without a permanent place of residence are undoubtedly very small as a proportion of the total age groups and probably even as a proportion of all dropouts. Thus, regardless of their prevalence rates, they would be unable to move the prevalence estimates by a very large proportion except in the case of the most rare events—in particular, heroin use. We do believe that in the case of heroin use—particularly regular use—we are very likely unable to get a very accurate estimate even with the corrections used in this report. The same may be true for crack cocaine and PCP. For the remaining drugs, we conclude that our estimates based on participating seniors, though somewhat low, are not bad approximations for the age group as a whole.

Effects of omitting dropouts in trend estimates. Whether the omission of dropouts affects the estimates of trends in prevalence rates is a separate question, however, from the degree to which it affects absolute estimates at a given point in time. The relevant issues parallel those discussed earlier regarding the possible effects on trends of omitting the absentees. Most important is the question of whether the rate of dropping out has been changing in the country, since a substantial change would mean that seniors studied in different years would represent noncomparable segments of the whole class/age cohort. Fortunately for the purposes of this study, at least, the official government data provided in Figure A-1 indicate a very stable rate of dropping out since 1972.

Given that there appears to be no sound evidence of an appreciable change in the dropout rate, the only reason that trend data from seniors would deviate from trends for the entire class cohort (including dropouts) would be if the constant proportion who have been dropping out showed trends contrary to those observed among seniors; and even then, because of their small numbers, they would have to show dramatically different trends to be able to change the trend story very much for the age group as a whole. There has been no hypothesis offered for such a differential shift among dropouts which these authors, at least, find very convincing.

One hypothesis occasionally heard was that more youngsters were being expelled from school, or voluntarily leaving school, because of their drug use; and that this explained the downturn in the use of many drugs being reported by the study in the 1980s. However, it is hard to reconcile this hypothesis with the virtually flat (or, if anything, slightly declining) dropout rates over the period displayed in Figure A-1, unless one posits a perfectly offsetting tendency for more completion among those who are less drug prone—hardly a very parsimonious explanation. Further, the reported prevalence of some drugs remained remarkably stable throughout those years of the study (e.g., alcohol and opiates other than heroin) and the prevalence of some rose (cocaine until 1987, and amphetamines until 1981). These facts are not very consistent with the hypothesis that there had been an increased rate of departure by the most drug prone. Certainly more youngsters leaving school in the 1980s had drug problems than was true in the 1960s. (So did more of those who stay in.) However, they still seem likely to be very much the same segment of the population, given the degree of association that exists between drug use and deviance and problem behaviors of various sorts.

MORE RECENT UPDATE ON CORRECTIONS FOR DROPOUTS

More recently, we have looked at additional data regarding the effects of exclusion of dropouts. One additional source of information is a special report from the 1988 National Household Survey on Drug Abuse.[62] This report compared selected drug use rates for 16-17 year old respondents who were classified as currently enrolled in school or as having dropped out of school. The authors of that report concluded that: "The percentage of youth aged 16 and 17 who reported use of any illicit drug, marijuana, cocaine, and alcohol did not differ significantly among dropouts and those currently enrolled in school." (pg 22) Differences in illicit drug use between high school graduates and dropouts were also slight among 21- to 25-year olds.

The authors noted that their findings appeared somewhat contrary to popular conceptions, as well as to some other research. Moreover, they reported that preliminary data for 20- to 34-year olds from the 1990 NHSDA showed higher rates of cocaine and marijuana use among dropouts. The authors conjectured that perhaps differences between dropouts and graduates emerge after age 25, when more young adults have finished college. They also noted that other variables, such as race, ethnicity, and socioeconomic status may confound the dropout versus graduate comparison. An additional problem was that, prior to the 1991 survey, the NHSDA did not include individuals who did not live in households; perhaps the more deviant dropouts were over represented in the excluded groups.

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[62] National Institute on Drug Abuse. (1991). "Drug use among youth: Findings from the 1988 National Household Survey on Drug Abuse." (DHHS Publication No. (ADM) 91-1765). Rockville MD: National Institute on Drug Abuse.

More recently, we have examined some data from the 1991 National Household Surveys on Drug Abuse. Specifically, we obtained estimated prevalence rates for two key illicit drugs, marijuana and cocaine, among dropouts ages 16-18. Table A-1 indicates the lifetime and monthly prevalence rates for Monitoring the Future seniors, and for NHSDA seniors and NHSDA dropouts.

As can be seen, the 1991 NHSDA dropouts aged 16-18 were distinctly higher in cocaine and marijuana use than the NHSDA seniors, and the 1991 MTF seniors. (This result is contradictory to the results from the earlier report based on 1988 data. The relatively small numbers of dropouts make definitive statements difficult.) As discussed above, however, the relatively small proportion of the population who are dropouts reduces the impact that their higher prevalence rates have on overall population estimates.

Table A-2 compares the total population prevalence estimates derived using two different methods. The first method shows the estimates that result when we use the method we previously described, which provided the data shown in Figure A-2, where the prevalence rate among dropouts is assumed to be higher than seniors present by 1.5 times the difference between seniors present and seniors absent. Column (2) in Table A-2 is calculated by reweighting the data for absenteeism, and calculating the estimated prevalence among absentees. The prevalence among dropouts (column (4)) is estimated by assuming that they differ from seniors present by a factor 1.5 times greater than the difference between seniors present and seniors absent. The data in columns (1) and (2) are combined in appropriate proportion to derive estimated prevalence among seniors present plus absentees (column (3)). The data in columns (1), (2), and (4) are then combined in appropriate proportions to derive estimated prevalence rates for the entire class cohort (shown in column (6)). (For 1991, the percentage of dropouts is estimated at 15% and the percentage of seniors absent is 15.9% [based on data collected in participating schools]; these figures result in the following proportions of the total age cohort: seniors present, .715; seniors absent, .135; and dropouts, .150.)

The second method for estimating prevalence rates for dropouts (column (9)), and the entire class cohort (column (10)), is based on the estimated prevalence from MTF seniors present and seniors absent, and then adjusts for the missing dropout segment by assuming that the difference between NHSDA seniors versus NHSDA dropouts (column (8)) is the best estimate of the difference between dropouts and stayins (column (10)).

The data in columns (6) and (7) are prevalence rates reported in the 1991 NHSDA seniors and for dropouts age 16-18, and column (8) shows the algebraic difference. This absolute "bias" is treated as an estimate of the difference between seniors (present plus absent) versus dropouts. This "bias" is then applied to the estimated prevalence based on MTF data of seniors present plus absent (column (3)) to derive an estimate of the prevalence among dropouts (column (9)). These estimates are higher than the NHSDA estimates because MTF estimates for nondropouts are higher than the NHSDA estimates. Finally, the data in columns (3) and (9) are combined in appropriate proportion to derive estimates presented in column (10) for the entire cohort.

Table A-1. Comparison of 1991 Monitoring the Future Seniors, NHSDA Seniors, and NHSDA Dropouts

	MTF Seniors	NHSDA Seniors	NHSDA Dropouts 16-18
Marijuana			
Lifetime	36.7	31.9	60.7
30-Days	13.8	11.6	21.0
Cocaine			
Life	7.8	8.6	20.0
30-Days	1.4	1.3	2.3

Note that the estimated prevalence rates among dropouts based on NHSDA data are not very different from the estimates using the "1.5" factor. (Compare columns (9) and (4)). Consequently, the data in column (10) show estimates that turn out to be highly similar to those in column (5). This similarity suggests that the estimates of corrections for dropouts that we have been providing, based on earlier data, are probably still reasonable. In fact, based on all of the NHSDA data, they may actually be conservatively high.

Finally, an additional piece of information relative to the comparison of drug use rates among students who stay in school versus dropouts comes from Fagan and Pabon (1990),[63] who report some comparison data between high school students and dropouts from six inner-city neighborhoods. About 1,000 male students and 1,000 female students were compared with 255 male dropouts and 143 female dropouts. Although dropouts were generally more delinquent, and more involved with substance use, there was also a great deal of variability by specific class of substances. As would be generally expected, marijuana use was lower among students, compared to dropouts. Psychedelic use, on the other hand, was *higher* among students than among dropouts. Use of tranquilizers and barbiturates was also higher among students. Amphetamine use was lower among male students, but higher among female students, compared to same-sex dropouts. Similarly, cocaine use was lower among male students, but higher among female students, compared to dropouts. Students of both genders reported more heroin use than did dropouts. Inhalant use did not differ significantly between students and dropouts.

Overall, the data indicate a distinct variation, depending on the class of drug. In fact, heroin use surprisingly was higher among students. The study shows that the usual assumption that dropouts invariably use drugs more than students is not always true.

SUMMARY AND CONCLUSIONS

In sum, while we believe there is some underestimation of the prevalence of drug use in the cohort at large as a result of the dropouts being omitted from the universe of the study, we think the degree of underestimation is rather limited for all drugs (with the possible exceptions of heroin, crack, and PCP) and, more importantly, that trend estimates have been rather little affected. Short of having good trend data gathered directly from dropouts we cannot close the case definitively. Nevertheless, we think the available evidence argues strongly against alternative hypotheses—a conclusion which was also reached by the members of the NIDA technical review on this subject held in 1982.[64]

> . . . the analyses provided in this report show that failure to include these two groups (absentees and dropouts) does not substantially affect the estimates of the incidence and prevalence of drug use.

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[63] Fagan, J. & Pabon, E. (1990). Contributions of delinquency and substance use to school dropout among inner-city youths. *Youth & Society, 21*, 306-354.

[64] Clayton, R.R. & Voss, H.L. (1982). *Technical review on drug abuse and dropouts*. Rockville, MD: National Institute on Drug Abuse.

EXAMPLES OF REVISED ESTIMATES FOR TWO DRUGS

Figure A-2 provides the prevalence and trend estimates of marijuana and cocaine, for both the lifetime and thirty-day prevalence periods, showing (a) the original estimates based on *participating seniors* only; (b) the empirically derived, revised estimates based on *all seniors*, including the absentees; and (c) estimates for the *entire class / age cohort*. The last estimate was developed using the assumption judged to be most reasonable above—namely that the prevalence rate for dropouts differ from the prevalence rate for participating seniors by one and one-half times the amount that the prevalence rate for absentees does. *Estimates were calculated separately for each year, thus taking into account any differences from year to year in the participation or absentee rates.* The dropout rate was taken as a constant 15% of the age group across all years, based on Census estimates.

As Figure A-2 illustrates, any difference in the slopes of the trend lines between the original and revised estimates is extremely, almost infinitesimally, small. The prevalence estimates are higher, of course, but not dramatically so, and certainly not enough to have any serious policy implications. As stated above, the corrections for eighth and tenth grade samples should be considerably less, and there is certainly no reason to think that absentee or dropout rates at those levels have changed since 1991 in any way which could have changed their trend stories. Therefore, we have confidence that the trend stories which have shown up for the in-school populations represented in this study would be very similar to the trend stories which would pertain if the entire age cohorts had been the universes from which we sampled.

FIGURE A-2

Estimates of Prevalence and Trends for the Entire Age/Class Cohort, Adjusting for Absentees and Dropouts for Twelfth Graders

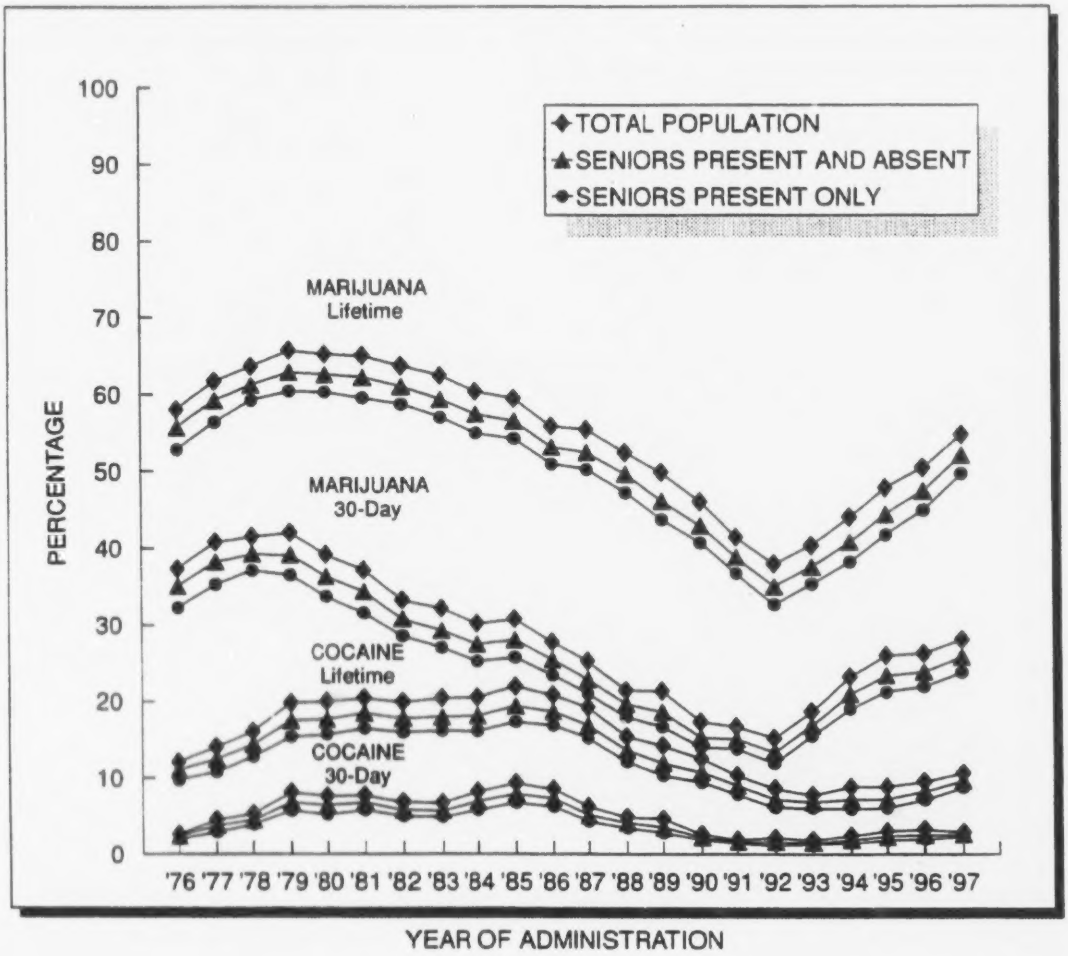

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Table A-2. Estimated Prevalence Rates for Marijuana and Cocaine, 1991, Based on Monitoring the Future and National Household Survey on Drug Abuse

	Monitoring the Future					NHSDA			Combined Approach	
	(1) Seniors Present	(2) Seniors Absent	(3) Seniors Absent & Present	(4) Dropouts	(5) Total	(6) Seniors	(7) Dropouts (Age 16-18)	(8) Difference	(9) Dropouts	(10) Total
Marijuana										
Lifetime	36.7	49.9	38.8	56.5	41.4	31.9	60.7	28.8	67.6	43.1
30-Day	13.8	22.0	15.1	26.1	16.7	11.6	21.0	9.4	24.5	16.5
Cocaine										
Lifetime	7.8	15.3	9.0	19.1	10.3	8.6	20.0	11.4	20.4	10.7
30-Day	1.4	2.7	1.6	3.3	1.9	1.3	2.3	1.0	2.6	1.8

NOTES: The entries in columns are as follows:

(1) estimates based on all MTF seniors who completed questionnaires.
(2) estimated prevalence rates among seniors who were absent (using data from seniors who were present, as explained in text).
(3) estimated prevalence rates among seniors present plus seniors who were absent.
(4) estimated prevalence rates among dropouts, based on assumptions described in text.
(5) estimated prevalence rates among seniors present, seniors who were absent, and same age dropouts.
(6) estimates based on all NHSDA respondents who were high school seniors.
(7) estimates based on all NHSDA respondents, 16-18 years old, who were not attending school and had not graduated.
(8) difference between columns (6) and (7), that is, the difference between all NHSDA seniors and dropouts; this is considered a valid estimate of the population difference between seniors and dropouts.
(9) sum of columns (3) and (8), combining MTF estimated use among all seniors (present and absent) plus the estimated population difference between all seniors and dropouts, resulting in an estimated prevalence among dropouts.
(10) weighted combined estimate of prevalence, using MTF estimates for all seniors (column (3)), and estimate of prevalence among dropouts (column (9)).

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Appendix B

DEFINITION OF BACKGROUND AND DEMOGRAPHIC SUBGROUPS

Throughout this volume data are presented for the total sample of eighth, tenth, and twelfth graders. Data are also presented for many subgroups of students. The following are brief descriptions of the background and demographic subgroups used in this volume.

Total:	The total sample of respondents in a given year of the study.
Gender:	***Male and female.*** Respondents with missing data on the question asking the respondent's sex are omitted from both groupings.
College Plans:	Respondents not answering the college plans question are omitted from both groupings. (Among those who do not expect to complete a four-year college program, a number still expect to get some post-secondary education.) College plans groupings are defined as follows: ***None or under 4 years.*** Respondents who indicate they "definitely won't" or "probably won't" graduate from a four-year college program. ***Complete 4 years.*** Respondents who indicate they "definitely will" or "probably will" graduate from a four-year college program.
Region:	Region of the country in which the respondent's school is located, as determined by the Survey Research Center's Sampling Section. There are four mutually exclusive regions of the country based on Census categories, defined as follows: ***Northeast.*** Census classifications of New England and Middle Atlantic states include: Maine, New Hampshire, Vermont, Massachusetts, Rhode Island, Connecticut, New York, New Jersey, and Pennsylvania. ***North Central.*** Census classifications of East North Central and West North Central states include: Ohio, Indiana, Illinois, Michigan, Wisconsin, Minnesota, Iowa, Missouri, North Dakota, South Dakota, Nebraska, and Kansas. ***South.*** Census classifications of South Atlantic, East South Central, and West South Central states include: Delaware, Maryland, District of Columbia, Virginia, West Virginia, North Carolina, South Carolina, Georgia, Florida, Kentucky, Tennessee, Alabama, Mississippi, Arkansas, Louisiana, Oklahoma, and Texas. ***West.*** Census classifications of Mountain and Pacific states include: Montana, Idaho, Wyoming, Colorado, New Mexico, Arizona, Utah, Nevada, Washington, Oregon, and California.

Population Density: Population density of the area in which the schools are located. There are three mutually exclusive groups which have been variously defined, as described below. (The 1975-1985 samples were based on the 1970 Census; in 1986 one-half of the sample was based on the 1970 Census, the other half of the sample was based on the 1980 Census; in 1986 through 1993 the samples were based on the 1980 Census; in 1994 half of the sample was based on the 1980 Census and half on the 1990 Census; and after 1994, all samples were based on the 1990 Census. The three levels of population density were defined in terms of Standard Metropolitan Statistical Area (SMSAs) designations through 1985, when we changed to the new Census Bureau classifications of Metropolitan Statistical Areas (MSAs), as is described below:

Large MSAs. In the 1975-1985 samples these were the twelve largest Standard Metropolitan Statistical Areas (SMSA) as of the 1970 Census: New York, Los Angeles, Chicago, Philadelphia, Detroit, San Francisco, Washington, Boston, Pittsburgh, St. Louis, Baltimore and Cleveland. From 1986 to 1994, the "large MSA" group consisted of the 16 largest MSAs as of the 1980 Census. These 16 MSAs include all of the MSAs mentioned above (except Cleveland) plus the MSAs of Dallas-Fort Worth, Houston, Nassau-Suffolk, Minneapolis-St. Paul, and Atlanta.

Beginning with the first-year schools in 1994, the new sample design was based on the 1990 Census. In the 1990s sample only the 8 largest MSAs are represented at all three grade levels; the remaining 20 are divided into pairs, with half belonging to the 12th and 8th grade samples and the other half belonging to the 10th grade sample. The 8 largest are New York NY-NJ, Los Angeles CA, Chicago IL, Philadelphia PA-NJ, Detroit MI, Washington DC-MD-VA, Dallas-Ft. Worth TX, and Boston MA. The remaining are: Houston TX, Atlanta GA, Seattle-Tacoma WA, Minneapolis MN-WI, St. Louis MO-IL, San Diego CA, Baltimore MD, Tampa-St. Petersburg-Clearwater FL, Riverside-San Bernardino CA, Nassau-Suffolk NY, Anaheim-Santa Ana CA, Pittsburgh PA, Phoenix AZ, Oakland CA, Cleveland OH, Miami-Hialeah FL, Newark NJ, Denver CO, San Francisco CA, Kansas City MO-KS.

Other MSAs. Includes all other Metropolitan Statistical Areas (MSAs) except those listed above. Except in the New England states, an MSA is a county or group of contiguous counties which contains at least one city of 50,000 inhabitants or more, or "twin cities" with a combined population of at least 50,000. In the New England states MSAs consist of towns and cities instead of counties. Each MSA must include at least one central city, and the complete title of an MSA identifies the central city or cities. For the complete description of the criteria used in defining MSAs, see the Office of Management and Budget publication, *Metropolitan Statistical Areas, 1990* (NTIS-PB90-214420), Washington, D.C. The population living in MSAs is designated as the metropolitan population.

Non-MSAs. Includes all areas not designated as Metropolitan Statistical Areas (MSAs). The population living outside MSAs constitutes the nonmetropolitan population.

Parental Education: This is an average of mother's education and father's education based on the respondent's answers for each parent's education level using the following scale: (1) completed grade school or less, (2) some high school, (3) completed high school, (4) some college, (5) completed college, (6) graduate or professional school after college. Missing data was allowed on one of the two variables.

Race/ Ethnicity: ***White.*** Includes those respondents who describe themselves as White or Caucasian.

Black. Includes those respondents who in 1975-1990 describe themselves as Black or Afro-American, or who after 1990 describe themselves as Black or African American.

Hispanic. Includes those respondents who in 1975-1990 describe themselves as Mexican American or Chicano, or Puerto Rican or other Latin American. After 1990 this group includes those respondents who describe themselves as Mexican American or Chicano, or Cuban American, or Puerto Rican American, or other Latin American. After 1994, the term Puerto Rican American was shortened to Puerto Rican.

Appendix C

ESTIMATION OF SAMPLING ERRORS

This appendix provides some guidance for those who wish to calculate confidence intervals around the percentage estimates reported in this volume, or to assess the statistical significance of differences between percentage estimates.

All of the percentages reported in this volume are estimates of the response percentage that would have been obtained if, instead of using a sample survey, we had surveyed all eighth-, tenth-, and twelfth-grade students throughout the United States. Because we surveyed only a sample, and not the entire population, there are sampling errors associated with each estimate. For any particular percentage resulting from a sample survey we cannot know exactly how much error has resulted from sampling, but we can make reasonably good estimates of "confidence intervals"—ranges within which the "true" population value is very likely to fall. The word "true" in this context refers to the value that would be found if we had surveyed the total population—that is all eighth-, tenth-, and twelfth-grade students in the United States. This concept of "true" population value does not take account of biases that might occur due to refusals, intentional or unintentional distortion of responses, faulty question wording, and other factors.

CALCULATING CONFIDENCE INTERVALS

The most straightforward types of samples, from a statistical standpoint at least, are simple random samples. In such samples the confidence limits for a proportion are influenced by the size of the sample, or particular subsample, under consideration, and also by the value of the proportion. (Although the estimates in this volume are expressed as percentages, this appendix generally deals with the equivalent proportion, for ease of presentation.)

The ***standard error***[65] of a proportion p based on a simple random sample of n cases is equal to:

$$\sqrt{p(1.0-p)/n} \qquad \textbf{(1)}$$

With a large number of cases, a symmetrical ***confidence interval*** around p would be approximated by:

$$p \pm z\sqrt{p(1.0-p)/n} \qquad \textbf{(2)}$$

where z is the appropriate value from the z-distribution. For a 95% confidence interval, $z = 1.96$.

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[65] The standard error of an estimate is a measure of sampling error; it is defined as the standard deviation of the sampling distribution of the statistic. It is used to construct the confidence interval around an estimate.

Many of the proportions presented in this volume represent rare events, with values being close to zero. At those low values, a more appropriate confidence interval would be asymmetric. A more exact calculation for confidence intervals, which will usually produce asymmetric confidence limits, is[66]:

$$\frac{n}{n+z^2}\left[p+\frac{z^2}{2n} \pm z\sqrt{\frac{p(1-p)}{n}+\frac{z^2}{4n^2}}\right] \qquad \textbf{(3)}$$

Significance of Difference between Two Proportions

In addition to estimating the sampling error around a single proportion, we often wish to test the significance of a difference between two proportions, such as the difference between the proportion of marijuana users among male students as compared to among female students. The following formula produces a statistic that can be referred to a standard normal distribution, assuming reasonably large numbers of cases:

$$z = \frac{p_1 - p_2}{\sqrt{p_c(1-p_c)\,\frac{n_1+n_2}{n_1 n_2}}} \qquad \textbf{(4)}$$

where

$$p_c = \frac{n_1 p_1 + n_2 p_2}{n_1 + n_2} \qquad \textbf{(5)}$$

and p_c is the estimated population proportion, p_1 is the observed proportion (of users) in the first group, p_2 is the observed proportion in the second group, n_1 is the number of cases in the first group, and n_2 is the number of cases in the second group.

DESIGN EFFECTS IN COMPLEX SAMPLES

Formulas (1) - (5) are appropriate only for simple random samples.[67] In complex samples such as those used in the Monitoring the Future surveys, it is also necessary to take account of the effect that the sampling design has on the size of standard errors. (A complex sample is any sample that is not a simple random sample.)

The Monitoring the Future sample design incorporates stratification, clustering, and differential weighting to adjust for differential probabilities of selection. These design elements influence sampling error. While stratification tends to heighten the precision of a sample compared with a simple random sample of the same size (usually reducing the sampling error), the effects of clustering and weighting reduce precision (usually increasing the sampling error). The net result is that complex sample designs almost always result in increased sampling error (but they usually result in more efficient samples in all other respects). Therefore, it is not appropriate to apply the standard, simple random sampling formulas to such complex samples in order to obtain estimates of sampling errors.

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[66] Formula 6.11.1, page 240 in Hays, W.L., "Statistics" (Fourth Edition), Holt, Rinehart, & Winston, 1988.

[67] A simple random sample is one in which each element is selected independently of, and with the same probability as, all other elements in the universe of elements from which the sample is drawn.

Methods exist for correcting for this underestimation. Kish (1965, p. 258) defines a correction term called the ***design effect*** (DEFF), where

$$DEFF = \frac{actual\ sampling\ variance}{variance\ expected\ from\ a\ random\ sample} \qquad \textbf{(6)}$$

Thus, if the actual sampling variance in a complex sample is four times as large as the expected sampling variance from a simple random sample with the same number of cases, the DEFF is 4.0. Because confidence intervals are proportionate to the square root of variance, the confidence intervals for such a sample would be twice as large (because the square root of 4 is 2) as the confidence interval for a simple random sample with the same number of cases. If an estimate of design effect is available, one of the simplest correction procedures to follow is to divide the actual numbers of cases by the design effect (thereby "depreciating" the actual number to its equivalent value in simple random sample terms) and then employ the standard statistical procedures that are available for application to simple random samples. Thus, for example, if the design effect (DEFF) for a sample of 16,000 were 4.0, then one could divide the 16,000 by 4.0 and the result, 4,000, could be entered as the value of "n" in statistical tables and formulas designed for use with simple random samples. In short, the strategy involves dividing the actual number of cases by the appropriate DEFF in order to get a "simple random sampling equivalent n" or, more simply, an "effective n" for use in statistical procedures designed for random samples.

Estimating Design Effects

In principle, every different statistic resulting from a complex sample can have its own design effect, and different statistics in the same sample may have quite different design effects. However, it is not feasible to compute every design effect, nor would it be feasible to report every one. Moreover, "Sampling errors computed from survey samples are themselves usually subject to great sampling variability ... Sampling theory, and experience with many and repeated computations, teach us not to rely on the precision of individual results, even when these are based on samples with large numbers of elements." (Kish, Groves, & Krotki, 1976, p. 19)[68] Thus, in practice, design effects are averaged across a number of statistics and these average values are used to estimate the design effects for other statistics based on the same sample. Sometimes, a single design effect is applied to all the estimates in a given study. This is usually an oversimplification. In the present study a rather extensive exploration of design effects revealed a number of systematic differences. These systematic differences have to do with the particular measures being examined, the subgroups involved, and the question of whether a trend over time is being considered. Thus, we provide here a more elaborated set of estimates of design effects that vary along these several dimensions.[69]

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[68] Kish L, Groves R.M., & Krotki K.P. (1976) Sampling errors for fertility surveys (Occasional Paper Series No. 17). Voorburg, The Netherlands: International Statistical Institute.

Factors Affecting Design Effects

Design effects are systematically related to two factors: the amount of "clustering" and the average cluster size. (Each school in the Monitoring the Future design can be considered a cluster of cases, or students.) Specifically,

$$DEFF \approx 1 + \rho(\tilde{n} - 1) \qquad \textbf{(7)}$$

(Kish, 1965, section 5, p. 162; Kalton, 1983, p. 31)

where ñ is the average cluster size and ρ is the intraclass correlation coefficient measuring the degree of cluster homogeneity. Note that the equality is approximate.

An important consequence of this relationship is that subgroups such as male or female that are typically represented within all clusters (that is, all schools) have a lower average cluster size. All (or virtually all) of the schools in the sample have both male and female students. Thus, each of these subgroups is spread more or less evenly across the full number of clusters (schools). Because each of these subgroups includes approximately half of the total sample, the average number of cases per cluster is about half as large as for the total sample, and this leads to a smaller design effect than is found for the total sample. (There is usually not much difference in ρ, the measure of cluster homogeneity.) Other subgroups involving college plans or parental education are also distributed across all clusters (although not as evenly as gender) and thus are subject to the same phenomenon of smaller design effects because of the smaller number of cases per cluster. This is in contrast to the situation with subgroups such as region of the country, each of which will normally have the same average cluster size as the total sample from the whole country—just fewer clusters. The former type of subgroup (cross-class) will usually have a lower design effect, while the latter type of subgroup (segregated) will usually have a design effect similar to the overall. In this study, cross-class subgroups include gender, college plans, and parental education. Segregated subgroups include region and population density. Race/ethnicity is a mixed case, in that there tends to be substantial clustering by school. Consequently, design effects for minority race/ethnic subgroups tend to be somewhat higher than average, though this tendency is not always evidenced. Because such a high proportion of respondents in most schools are white, the associated design effects for them tend to be similar to the overall design effects.

As an empirical generalization, we have observed that design effects tend to be related to the actual prevalence rates of substance use (or p value). Thus, rarely used substances such as heroin typically have low design effects, while more commonly used substances such as cigarettes, alcohol, and marijuana typically have high design effects. Similarly, the design effect associated with the estimate of lifetime prevalence of any given substance is usually greater than (or equal to) the design effect associated with annual prevalence of that substance, which is in turn greater than the design effect for monthly prevalence. This tendency would imply that eighth grade design effects would typically be lower than those for tenth grade, which would be lower than twelfth grade (because prevalence rates are usually greater in the upper grades). However, eighth grade schools tend to be more homogenous in socioeconomic terms than do high schools, because they tend to draw from smaller geographic areas; this tends to make eighth grade schools more homogenous with respect to drug use, which would lead to larger design effects. The combination of factors generally leads to slightly lower design effects for the lower grade levels (although not in all cases).

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[69] All design effects were estimated using the Taylor series expansion method, as implemented in the OSIRIS.IV software analysis system.

Design Effects for Differences between Two Proportions

Trends between two non-adjacent years. A trend over an interval greater than one year (for example, a comparison between 1994 and 1980) is basically a comparison between estimates from two independent samples. Therefore, the design effects for a single estimated proportion is appropriate.

Trends between adjacent years. One of the central purposes of the Monitoring the Future project is to monitor trends over time; indeed, the study procedures have been standardized across years insofar as possible in order to provide the opportunity for sensitive measurement of change. One of the factors designed to produce an added degree of consistency from one year to the next is the use of each school for two data collections, which means that for any two successive years half of the sample of schools is the same. This means that there is a good deal of consistency in the sampling and clustering of the sample from one year to the next. As a result, when one-year comparisons are made between adjacent years, the design effects for the trend estimate are appreciably smaller than if completely independent samples of schools had been drawn each year. In other words, the samples in adjacent years are not independent; on the contrary, there is a considerable degree of covariance between them. This covariance, or partial "matching," reduces the design effect for differences observed between adjacent years, compared to what they would have been with totally independent samples.

In order to estimate the extent of “shrinkage”, we calculated about ninety-five DEFFs for adjacent 1-year trend data where we had prevalence data for the same grade/drug combinations. The relationship between the two sets of DEFFs (prevalence versus 1-year trend) was found to be approximately linear, with a product-moment correlation of .88 for DEFFs (and .89 for DEFTs, the square root of DEFF). This seemed sufficiently high to justify simply estimating the linear relation, predicting the trend DEFF from the prevalence DEFF, and using that to estimate the 1-year trend DEFF for all measures.

Comparisons between subgroups within a single year. We examined a variety of design effects involving comparisons between subgroups based on gender, college plans, and parental education. A considerable simplification was achieved when we noted that generally the average DEFF values for subgroup comparisons were quite similar to the average DEFF values for 1-year trends.

With respect to segregated variables like region and population density, the subgroup samples are essentially independent, therefore, the prevalence design effects are appropriate for comparisons among these subgroups.

Thus, our exploration of design effects resulted in the following strategies and simplifications:

Design effects are provided for 7 different groupings of drugs, as follows:

(a) An Index of Use of Illicit Drugs Other Than Marijuana
(b) Use of Any Illicit Drug, Use of Any Illicit Drug including Inhalants, and Marijuana
(c) Hallucinogens, LSD, Cocaine, and Other Cocaine (i.e., not Crack)
(d) Heroin, Crack Cocaine, Steroids, Nitrites, PCP, Ice, and Methaqualone
(e) Opiates Other Than Heroin, Barbiturates, Tranquilizers, Hallucinogens Other Than LSD, and Sedatives
(f) Amphetamines and Inhalants
(g) Alcohol (including Use of Alcohol and Getting Drunk) and Tobacco (including Smokeless Tobacco)

Design effects were found to be generally similar for all the drugs contained within each grouping, but somewhat different across groupings.

In general, intervals of use (lifetime, annual, 30-day, daily) are distinguished. For some substances, though, the variation by interval was slight enough to ignore.

On both logical and empirical grounds, there seemed little reason to distinguish among the "segregated" groups: total sample, and groups defined by region and by population density. The average cluster size should be about the same, and there should not be much variation in the degree to which drug use clusters by school within these categories. Some variation was evident empirically, but it did not appear to be systematic. Thus, these groups are assigned equal design effects.

Separate design effect values are provided for estimates of use (prevalence) among the three grade levels (8, 10, 12), for subgroups defined by gender (males, females), college plans (planning to complete 4 years, not planning to complete 4 years), parental education (five levels), and race/ethnicity (black, white, Hispanic). In some cases, particularly for the less prevalent drugs, where design effects are very low, the estimated design effects in fact do not vary by group.

Estimates of design effects are also provided for 1-year trends. For trends across nonadjacent years, the standard design effects for prevalence are appropriate. Estimates of design effects are also provided separately for comparisons of subgroups within a given year.

DETERMINING EFFECTIVE N'S

Tables C1 through C3 provide estimates of design effects that can be used to "shrink" the weighted numbers of cases given in each table in this volume to an "effective n", which allows for the use of standard formulas in calculating sampling errors, confidence intervals, and statistical significance of differences in proportions. The tables are in three sets: the first set (C1a-C1g) is appropriately used for a 1-year trend across adjacent years; the second set (C2a-C2g) is for a single prevalence or a comparison across non-adjacent years; and the third (C3a-C3g) for a comparison between subgroups in a single year. To use the tables, the reader should determine whether the design effect is needed for a 1-year trend (Table C1), a single prevalence (Table C2), or a subgroup comparison within a year (Table C3), and which substance is involved (a-g), and then, the appropriate table can be accessed. Within the table, the reader needs to determine which subgroup (or Total sample) is involved, which grade level, and which interval of use. Then, the appropriate design effect can be looked up, and used to deflate the weighted number of cases, to arrive at an "effective n." This effective n would be used in formulas (1) to (5), given above.

As an example, suppose one wished to compare the 30-day prevalence of marijuana use for the total eighth-grade sample in 1996 with 1997. Table 2-1, provided earlier in this volume, indicates that prevalence was 11.3% in 1996, based on 17,800 cases; and 10.2% in 1997, based on 18,600 cases. Table C1b shows that an appropriate design effect for eighth grade 30-day marijuana use is 3.2. Each year's n would be divided by 3.2, producing effective n's of 5562 and 5812. These effective n's should be used in formula (4) to test whether the difference in proportions between the two years is statistically significant.

A Special Note on Racial/Ethnic Subgroups

As noted earlier in this volume, the prevalence estimates for racial/ethnic subgroups are reported for 2-year averages, instead of for single years, because of limited sample sizes. The design effects for prevalence rates for racial/ethnic subgroups provided in Tables C2a-C2g are appropriately applied to the number of cases provided for the combined years. In calculating a 1-year trend between the two most recent prevalence figures, however, one is in effect taking a trend between a prevalence based on data from the most recent single year and a prevalence based on data from a single year 2 years prior to the most recent year. For example, comparing the estimate based on combined 1994 and 1995 data with the combined 1993 and 1994 data is equivalent to comparing 1993 and 1995 because the 1994 observed value is contained in both data points and therefore cancels itself out. The design effects for trends provided in Tables C1a-C1g are therefore appropriately applied to one-half of the number of cases provided in each table for the combined years.

A NOTE ON INTERPRETATION OF DIFFERENCES AND STATISTICAL SIGNIFICANCE

This appendix provides the reader with procedures to assess the statistical significance of differences over time or between groups. In the text of this report we frequently comment on particular differences over time or between groups in terms of drug use. In general, our conclusions are based to a considerable extent on *patterns* of cross-time changes rather than on the statistical significance of any single comparison. That is, we assess the overall pattern of evidence, rather than any single finding to assess the likely validity of the finding.

There are at least five types of patterns that we inspect:

(1) replication across grades.

Because the annual samples of eighth, tenth, and twelfth grade students are three *completely independent samples*, one pattern that we look for is the similarity or contrast in changes that occur in the three groups. Although there is no requirement that changes occur similarly in all three groups, to the extent that a change is similar (or at least not inconsistent), we are more confident in its validity.

(2) replication across subgroups

To the extent that a change has occurred across a broad range of subgroups, we are more confident in its validity. For example, if an increase in use occurs among males and females, among noncollege bound and college bound, in different regions, etc., we would be more inclined to accept the change as reflecting an underlying reality.

(3) replication across half-samples

Because half of the schools remain the same from one-year to the next, any changes across a one-year interval can be examined for the half-sample that has remained constant. In other words, the data are examined for only the schools that provide data for both years. This removes any differences that may have occurred due simply to different schools being included.

(4) consistency across several years

Although each year's report emphasizes the changes in the most recent year, we pay careful attention to trends across several recent years. For example, when we observe a third or fourth consecutive year of consistent change in one direction (up or down), then we are more inclined to accept the validity of the general trend, even if none of the changes in any of the 1-year intervals was statistically significant.

(5) replication across different variables

Another type of replication or validation involves examining trends in different variables that would be expected to covary. For example, we have observed that perceived risk of harm associated with use of a specific substance tends to covary (negatively) with actual use of the substance. Similarly, we would expect reports of friends' use of specific substances to covary (positively) with reports of the respondents' own use. To the extent that different variables covary in the expected manner, then we would be more confident in interpreting the results.

Although we do not generally discuss all of these various contributions to our confidence, we do generally assess them, prior to making interpretations.

Tables of Design Effects to Use in Calculating "*Effective Ns*"

Table C-1, One-Year Trends in Prevalence

(a) An Index of Use of Illicit Drugs Other Than Marijuana
(b) Use of Any Illicit Drug, Use of Any Illicit Drug including Inhalants, and Marijuana
(c) Hallucinogens, LSD, Cocaine, and Other Cocaine (i.e., not Crack)
(d) Heroin, Crack Cocaine, Steroids, Nitrites, PCP, Ice, and Methaqualone
(e) Opiates Other than Heroin, Barbiturates, Tranquilizers, Hallucinogens Other than LSD, and Sedatives
(f) Amphetamines and Inhalants
(g) Alcohol (including Use of Alcohol and Getting Drunk) and Tobacco (including Smokeless Tobacco)

Table C-2, Prevalence or Change in Prevalence across Non-adjacent Years

(a) An Index of Use of Illicit Drugs Other Than Marijuana
(b) Use of Any Illicit Drug, Use of Any Illicit Drug including Inhalants, and Marijuana
(c) Hallucinogens, LSD, Cocaine, and Other Cocaine (i.e., not Crack)
(d) Heroin, Crack Cocaine, Steroids, Nitrites, PCP, Ice, and Methaqualone
(e) Opiates Other Than Heroin, Barbiturates, Tranquilizers, Hallucinogens Other Than LSD, and Sedatives
(f) Amphetamines and Inhalants
(g) Alcohol (including Use of Alcohol and Getting Drunk) and Tobacco (including Smokeless Tobacco)

Table C-3, Subgroups Comparisons within Any Single Year

(a) An Index of Use of Illicit Drugs Other Than Marijuana
(b) Use of Any Illicit Drug, Use of Any Illicit Drug including Inhalants, and Marijuana
(c) Hallucinogens, LSD, Cocaine, and Other Cocaine (i.e., not Crack)
(d) Heroin, Crack Cocaine, Steroids, Nitrites, PCP, Ice, and Methaqualone
(e) Opiates Other Than Heroin, Barbiturates, Tranquilizers, Hallucinogens Other Than LSD, and Sedatives
(f) Amphetamines and Inhalants
(g) Alcohol (including Use of Alcohol and Getting Drunk) and Tobacco (including Smokeless Tobacco)

TABLE C-1a
Design Effects for 1-Year Trends in Prevalence

		INDEX OF ANY ILLICIT DRUGS OTHER THAN MARIJUANA			
		Lifetime	Past 12 Months	Past 30 Days	Daily
SEGREGATED GROUPS:					
Total Sample: Any Region *(Northeast, North Central, South, and West)*; Any Population Density Stratum *(Large MSA, Other MSA, and Non-MSA)*					
	8th Grade	3.9	3.3	2.6	1.2
	10th Grade	4.3	3.6	2.7	1.2
	12th Grade	4.9	4.4	3.3	1.7
CROSS-CLASS GROUPS:					
Gender:					
Male	8th Grade	2.8	2.5	2.2	1.3
	10th Grade	3.1	2.7	2.4	1.2
	12th Grade	3.2	2.9	2.4	1.7
Female	8th Grade	3.1	2.8	2.1	1.2
	10th Grade	3.3	2.9	2.2	1.1
	12th Grade	3.5	3.3	2.8	1.6
College Plans:					
None or under 4 yrs.	8th Grade	2.0	1.9	1.6	1.2
	10th Grade	2.2	2.1	1.8	1.4
	12th Grade	2.1	1.9	1.6	1.5
Complete 4 years	8th Grade	3.5	2.8	2.3	1.2
	10th Grade	4.1	3.3	2.5	1.1
	12th Grade	4.4	3.8	3.0	1.7
Parental Education:					
Any stratum	8th Grade	2.1	2.0	1.6	1.1
	10th Grade	2.2	2.0	1.7	1.2
	12th Grade	2.4	2.2	1.7	1.4
Racial/Ethnic Group:					
White	8th Grade	4.0	3.8	2.9	1.4
	10th Grade	4.9	4.3	3.0	1.5
	12th Grade	4.2	4.0	2.9	2.0
Black	8th Grade	2.7	2.0	1.5	1.2
	10th Grade	3.0	2.6	1.9	1.3
	12th Grade	3.7	3.3	3.0	1.6
Hispanic	8th Grade	3.8	2.7	2.0	1.5
	10th Grade	4.5	2.9	1.8	1.3
	12th Grade	6.9	5.8	3.0	1.9

SOURCE: The Monitoring the Future Study, the University of Michigan.

TABLE C-1b
Design Effects for 1-Year Trends in Prevalence

		INDICES OF ANY ILLICIT DRUG USE, ANY ILLICIT DRUG USE INCLUDING INHALANTS, AND MARIJUANA			
		Lifetime	Past 12 Months	Past 30 Days	Daily
SEGREGATED GROUPS:					
Total Sample: Any Region *(Northeast, North Central, South, and West);* Any Population Density Stratum *(Large MSA, Other MSA, and Non-MSA)*					
	8th Grade	4.1	3.5	3.2	1.4
	10th Grade	5.0	4.3	3.4	1.5
	12th Grade	6.9	6.6	5.4	2.8
CROSS-CLASS GROUPS:					
Gender:					
Male	8th Grade	2.4	2.4	2.4	1.5
	10th Grade	3.4	3.0	3.0	1.5
	12th Grade	3.8	3.4	3.0	2.7
Female	8th Grade	3.4	3.0	2.4	1.3
	10th Grade	4.0	3.4	2.7	1.1
	12th Grade	4.6	4.6	4.5	2.6
College Plans:					
None or under 4 yrs.	8th Grade	2.3	2.3	2.0	1.3
	10th Grade	2.8	2.8	2.7	2.0
	12th Grade	2.4	2.4	2.1	2.1
Complete 4 years	8th Grade	3.3	2.4	2.4	1.5
	10th Grade	5.1	4.0	3.2	1.1
	12th Grade	6.1	5.3	4.5	3.0
Parental Education:					
Any stratum	8th Grade	2.1	2.1	1.9	1.1
	10th Grade	2.5	2.3	2.2	1.4
	12th Grade	3.0	2.8	2.3	1.9
Racial/Ethnic Group:					
White	8th Grade	4.5	4.4	4.1	1.9
	10th Grade	7.2	5.8	4.5	2.1
	12th Grade	5.0	5.0	4.2	3.7
Black	8th Grade	3.0	2.1	1.3	1.1
	10th Grade	4.0	4.0	2.6	1.5
	12th Grade	6.0	6.0	6.0	2.5
Hispanic	8th Grade	2.6	2.6	2.1	2.0
	10th Grade	4.9	3.0	1.6	1.5
	12th Grade	12.0	11.7	5.3	3.4

SOURCE: The Monitoring the Future Study, the University of Michigan.

TABLE C-1c
Design Effects for 1-Year Trends in Prevalence

		HALLUCINOGENS (UNADJUSTED AND ADJUSTED), LSD, COCAINE, OTHER COCAINE			
		Lifetime	Past 12 Months	Past 30 Days	Daily
SEGREGATED GROUPS:					
Total Sample: Any Region *(Northeast, North Central, South, and West)*; Any Population Density Stratum *(Large MSA, Other MSA, and Non-MSA)*					
	8th Grade	4.3	3.5	2.5	1.1
	10th Grade	4.3	3.5	2.5	1.1
	12th Grade	4.3	3.5	2.5	1.1
CROSS-CLASS GROUPS:					
Gender:					
Male	8th Grade	3.2	2.8	2.4	1.1
	10th Grade	3.2	2.8	2.4	1.1
	12th Grade	3.2	2.8	2.4	1.1
Female	8th Grade	3.2	2.8	2.0	1.1
	10th Grade	3.2	2.8	2.0	1.1
	12th Grade	3.2	2.8	2.0	1.1
College Plans:					
None or under 4 yrs.	8th Grade	2.0	1.9	1.4	1.1
	10th Grade	2.0	1.9	1.4	1.1
	12th Grade	2.0	1.9	1.4	1.1
Complete 4 years	8th Grade	4.2	3.2	2.4	1.1
	10th Grade	4.2	3.2	2.4	1.1
	12th Grade	4.2	3.2	2.4	1.1
Parental Education:					
Any stratum	8th Grade	2.1	1.9	1.5	1.1
	10th Grade	2.1	1.9	1.5	1.1
	12th Grade	2.1	1.9	1.5	1.1
Racial/Ethnic Group:					
White	8th Grade	4.2	3.8	2.8	1.2
	10th Grade	4.2	3.8	2.8	1.2
	12th Grade	4.2	3.8	2.8	1.2
Black	8th Grade	1.4	1.4	1.3	1.2
	10th Grade	1.4	1.4	1.3	1.2
	12th Grade	1.4	1.4	1.3	1.2
Hispanic	8th Grade	6.1	3.3	2.3	1.2
	10th Grade	6.1	3.3	2.3	1.2
	12th Grade	6.1	3.3	2.3	1.2

SOURCE: The Monitoring the Future Study, the University of Michigan.

TABLE C-1d
Design Effects for 1-Year Trends in Prevalence

		HEROIN, CRACK COCAINE, STEROIDS, NITRITES, PCP, ICE, METHAQUALONE			
		Lifetime	Past 12 Months	Past 30 Days	Daily
SEGREGATED GROUPS:					
Total Sample: Any Region *(Northeast, North Central, South, and West);* Any Population Density Stratum *(Large MSA, Other MSA, and Non-MSA)*					
	8th Grade	1.9	1.3	1.3	1.1
	10th Grade	1.9	1.3	1.3	1.1
	12th Grade	1.9	1.3	1.3	1.1
CROSS-CLASS GROUPS:					
Gender:					
Male	8th Grade	1.3	1.3	1.3	1.1
	10th Grade	1.3	1.3	1.3	1.1
	12th Grade	1.3	1.3	1.3	1.1
Female	8th Grade	1.9	1.5	1.3	1.1
	10th Grade	1.9	1.5	1.3	1.1
	12th Grade	1.9	1.5	1.3	1.1
College Plans:					
None or under 4 yrs.	8th Grade	1.4	1.4	1.4	1.1
	10th Grade	1.4	1.4	1.4	1.1
	12th Grade	1.4	1.4	1.4	1.1
Complete 4 years	8th Grade	1.5	1.3	1.1	1.1
	10th Grade	1.5	1.3	1.1	1.1
	12th Grade	1.5	1.3	1.1	1.1
Parental Education:					
Any stratum	8th Grade	1.3	1.3	1.3	1.1
	10th Grade	1.3	1.3	1.3	1.1
	12th Grade	1.3	1.3	1.3	1.1
Racial/Ethnic Group:					
White	8th Grade	1.6	1.5	1.4	1.2
	10th Grade	1.6	1.5	1.4	1.2
	12th Grade	1.6	1.5	1.4	1.2
Black	8th Grade	1.8	1.8	1.8	1.2
	10th Grade	1.8	1.8	1.8	1.2
	12th Grade	1.8	1.8	1.8	1.2
Hispanic	8th Grade	2.0	1.6	1.5	1.2
	10th Grade	2.0	1.6	1.5	1.2
	12th Grade	2.0	1.6	1.5	1.2

SOURCE: The Monitoring the Future Study, the University of Michigan.

TABLE C-1e
Design Effects for 1-Year Trends in Prevalence

		OPIATES OTHER THAN HEROIN, BARBITURATES, TRANQUILIZERS, HALLUCINOGENS OTHER THAN LSD, SEDATIVES			
		Lifetime	Past 12 Months	Past 30 Days	Daily
SEGREGATED GROUPS:					
Total Sample: Any Region *(Northeast, North Central, South, and West);* Any Population Density Stratum *(Large MSA, Other MSA, and Non-MSA)*					
	8th Grade	2.4	2.2	1.5	1.1
	10th Grade	2.4	2.2	1.5	1.1
	12th Grade	2.4	2.2	1.5	1.1
CROSS-CLASS GROUPS:					
Gender:					
Male	8th Grade	2.1	2.1	1.6	1.1
	10th Grade	2.1	2.1	1.6	1.1
	12th Grade	2.1	2.1	1.6	1.1
Female	8th Grade	2.0	1.6	1.3	1.1
	10th Grade	2.0	1.6	1.3	1.1
	12th Grade	2.0	1.6	1.3	1.1
College Plans:					
None or under 4 yrs.	8th Grade	2.0	1.6	1.3	1.1
	10th Grade	2.0	1.6	1.3	1.1
	12th Grade	2.0	1.6	1.3	1.1
Complete 4 years	8th Grade	2.0	1.6	1.3	1.1
	10th Grade	2.0	1.6	1.3	1.1
	12th Grade	2.0	1.6	1.3	1.1
Parental Education:					
Any stratum	8th Grade	2.0	1.6	1.3	1.1
	10th Grade	2.0	1.6	1.3	1.1
	12th Grade	2.0	1.6	1.3	1.1
Racial/Ethnic Group:					
White	8th Grade	2.5	2.5	1.9	1.2
	10th Grade	2.5	2.5	1.9	1.2
	12th Grade	2.5	2.5	1.9	1.2
Black	8th Grade	1.5	1.5	1.4	1.2
	10th Grade	1.5	1.5	1.4	1.2
	12th Grade	1.5	1.5	1.4	1.2
Hispanic	8th Grade	1.6	1.4	1.3	1.2
	10th Grade	1.6	1.4	1.3	1.2
	12th Grade	1.6	1.4	1.3	1.2

SOURCE: The Monitoring the Future Study, the University of Michigan.

TABLE C-1f
Design Effects for 1-Year Trends in Prevalence

		AMPHETAMINES, INHALANTS (UNADJUSTED AND ADJUSTED)			
		Lifetime	Past 12 Months	Past 30 Days	Daily
SEGREGATED GROUPS:					
Total Sample: Any Region *(Northeast, North Central, South, and West)*; Any Population Density Stratum *(Large MSA, Other MSA, and Non-MSA)*					
	8th Grade	3.5	3.0	2.1	1.1
	10th Grade	3.5	3.0	2.1	1.1
	12th Grade	3.5	3.0	2.1	1.1
CROSS-CLASS GROUPS:					
Gender:					
Male	8th Grade	2.7	2.4	1.9	1.1
	10th Grade	2.7	2.4	1.9	1.1
	12th Grade	2.7	2.4	1.9	1.1
Female	8th Grade	2.7	2.7	1.9	1.1
	10th Grade	2.7	2.7	1.9	1.1
	12th Grade	2.7	2.7	1.9	1.1
College Plans:					
None or under 4 yrs.	8th Grade	1.9	1.5	1.3	1.1
	10th Grade	1.9	1.5	1.3	1.1
	12th Grade	1.9	1.5	1.3	1.1
Complete 4 years	8th Grade	3.0	2.7	2.0	1.1
	10th Grade	3.0	2.7	2.0	1.1
	12th Grade	3.0	2.7	2.0	1.1
Parental Education:					
Any stratum	8th Grade	2.0	1.9	1.4	1.1
	10th Grade	2.0	1.9	1.4	1.1
	12th Grade	2.0	1.9	1.4	1.1
Racial/Ethnic Group:					
White	8th Grade	3.3	3.2	1.8	1.2
	10th Grade	3.3	3.2	1.8	1.2
	12th Grade	3.3	3.2	1.8	1.2
Black	8th Grade	3.6	2.4	1.8	1.2
	10th Grade	3.6	2.4	1.8	1.2
	12th Grade	3.6	2.4	1.8	1.2
Hispanic	8th Grade	2.6	2.3	1.5	1.2
	10th Grade	2.6	2.3	1.5	1.2
	12th Grade	2.6	2.3	1.5	1.2

SOURCE: The Monitoring the Future Study, the University of Michigan.

TABLE C-1g
Design Effects for 1-Year Trends in Prevalence

		ALCOHOL, BEEN DRUNK		CIGARETTES, SMOKELESS TOBACCO	
		Lifetime, Past 12 Months, Past 30 Days, 5+/2 Weeks	Daily	Lifetime, Past 30 Days, Daily	Half-pack or More per Day
SEGREGATED GROUPS:					
Total Sample: Any Region *(Northeast, North Central, South, and West);* Any Population Density Stratum *(Large MSA, Other MSA, and Non-MSA)*					
	8th Grade	3.7	1.3	3.8	3.0
	10th Grade	3.7	1.3	3.8	3.0
	12th Grade	3.7	1.3	3.8	3.0
CROSS-CLASS GROUPS:					
Gender:					
Male	8th Grade	2.4	1.3	2.3	2.0
	10th Grade	2.4	1.3	2.3	2.0
	12th Grade	2.4	1.3	2.3	2.0
Female	8th Grade	3.1	1.3	3.6	2.6
	10th Grade	3.1	1.3	3.6	2.6
	12th Grade	3.1	1.3	3.6	2.6
College Plans:					
None or under 4 yrs.	8th Grade	2.1	1.3	2.0	2.0
	10th Grade	2.1	1.3	2.0	2.0
	12th Grade	2.1	1.3	2.0	2.0
Complete 4 years	8th Grade	3.2	1.3	3.2	2.3
	10th Grade	3.2	1.3	3.2	2.3
	12th Grade	3.2	1.3	3.2	2.3
Parental Education:					
Any stratum	8th Grade	2.0	1.3	2.1	1.9
	10th Grade	2.0	1.3	2.1	1.9
	12th Grade	2.0	1.3	2.1	1.9
Racial/Ethnic Group:					
White	8th Grade	3.6	1.4	3.7	2.6
	10th Grade	3.6	1.4	3.7	2.6
	12th Grade	3.6	1.4	3.7	2.6
Black	8th Grade	4.5	1.4	2.4	1.4
	10th Grade	4.5	1.4	2.4	1.4
	12th Grade	4.5	1.4	2.4	1.4
Hispanic	8th Grade	3.0	1.4	2.7	1.9
	10th Grade	3.0	1.4	2.7	1.9
	12th Grade	3.0	1.4	2.7	1.9

SOURCE: The Monitoring the Future Study, the University of Michigan.

TABLE C-2a

Design Effects for (a) a Prevalence or (b) a Change in Prevalence Across Nonadjacent Years

		INDEX OF ANY ILLICIT DRUGS OTHER THAN MARIJUANA			
		Lifetime	Past 12 Months	Past 30 Days	Daily
SEGREGATED GROUPS:					
Total Sample: Any Region *(Northeast, North Central, South, and West)*; Any Population Density Stratum *(Large MSA, Other MSA, and Non-MSA)*					
	8th Grade	5.6	4.6	3.3	1.3
	10th Grade	6.2	5.0	3.4	1.4
	12th Grade	7.2	6.4	4.6	2.0
CROSS-CLASS GROUPS:					
Gender:					
Male	8th Grade	3.6	3.2	2.6	1.4
	10th Grade	4.1	3.5	3.0	1.4
	12th Grade	4.4	3.7	3.0	2.0
Female	8th Grade	4.2	3.7	2.4	1.3
	10th Grade	4.5	3.9	2.6	1.2
	12th Grade	4.9	4.6	3.6	1.9
College Plans:					
None or under 4 yrs.	8th Grade	2.3	2.2	1.8	1.3
	10th Grade	2.7	2.5	2.2	1.5
	12th Grade	2.4	2.3	1.9	1.6
Complete 4 years	8th Grade	4.8	3.6	2.8	1.4
	10th Grade	5.9	4.5	3.2	1.2
	12th Grade	6.4	5.3	4.0	2.1
Parental Education:					
Any stratum	8th Grade	2.4	2.2	1.8	1.2
	10th Grade	2.6	2.3	2.0	1.3
	12th Grade	2.9	2.6	2.0	1.5
Racial/Ethnic Group:					
White	8th Grade	5.0	4.8	3.6	1.8
	10th Grade	6.1	5.3	3.8	1.9
	12th Grade	5.2	5.0	3.7	2.5
Black	8th Grade	3.3	2.5	1.8	1.5
	10th Grade	3.8	3.3	2.4	1.6
	12th Grade	4.6	4.1	3.8	2.0
Hispanic	8th Grade	4.7	3.4	2.5	1.8
	10th Grade	5.7	3.6	2.3	1.6
	12th Grade	8.6	7.2	3.8	2.4

SOURCE: The Monitoring the Future Study, the University of Michigan.

TABLE C-2b

Design Effects for (a) a Prevalence or (b) a Change in Prevalence Across Nonadjacent Years

		INDICES OF ANY ILLICIT DRUG USE, ANY ILLICIT DRUG USE INCLUDING INHALANTS, AND MARIJUANA			
		Lifetime	Past 12 Months	Past 30 Days	Daily
SEGREGATED GROUPS:					
Total Sample: Any Region *(Northeast, North Central, South, and West)*; Any Population Density Stratum *(Large MSA, Other MSA, and Non-MSA)*					
	8th Grade	5.8	4.8	4.3	1.6
	10th Grade	7.5	6.2	4.7	1.7
	12th Grade	10.7	10.2	8.1	3.6
CROSS-CLASS GROUPS:					
Gender:					
Male	8th Grade	3.0	3.0	3.0	1.8
	10th Grade	4.6	4.0	4.0	1.7
	12th Grade	5.4	4.6	4.0	3.5
Female	8th Grade	4.6	4.0	2.9	1.4
	10th Grade	5.7	4.6	3.5	1.1
	12th Grade	6.8	6.7	6.5	3.3
College Plans:					
None or under 4 yrs.	8th Grade	2.7	2.7	2.2	1.5
	10th Grade	3.7	3.7	3.4	2.2
	12th Grade	3.0	3.0	2.5	2.5
Complete 4 years	8th Grade	4.5	3.0	3.0	1.7
	10th Grade	7.6	5.7	4.3	1.1
	12th Grade	9.3	8.0	6.6	3.9
Parental Education:					
Any stratum	8th Grade	2.5	2.4	2.0	1.2
	10th Grade	3.1	2.8	2.6	1.6
	12th Grade	4.0	3.6	2.8	2.0
Racial/Ethnic Group:					
White	8th Grade	5.6	5.5	5.1	2.4
	10th Grade	9.0	7.3	5.6	2.6
	12th Grade	6.3	6.3	5.3	4.6
Black	8th Grade	3.8	2.6	1.6	1.4
	10th Grade	5.0	5.0	3.3	1.9
	12th Grade	7.5	7.5	7.5	3.1
Hispanic	8th Grade	3.3	3.3	2.6	2.5
	10th Grade	6.1	3.8	2.0	1.9
	12th Grade	15.0	14.6	6.6	4.3

SOURCE: The Monitoring the Future Study, the University of Michigan.

TABLE C-2c

Design Effects for (a) a Prevalence or (b) a Change in Prevalence Across Nonadjacent Years

		HALLUCINOGENS (UNADJUSTED AND ADJUSTED), LSD, COCAINE, OTHER COCAINE			
		Lifetime	Past 12 Months	Past 30 Days	Daily
SEGREGATED GROUPS:					
Total Sample: Any Region *(Northeast, North Central, South, and West);* Any Population Density Stratum *(Large MSA, Other MSA, and Non-MSA)*					
	8th Grade	6.2	4.9	3.2	1.2
	10th Grade	6.2	4.9	3.2	1.2
	12th Grade	6.2	4.9	3.2	1.2
CROSS-CLASS GROUPS:					
Gender:					
Male	8th Grade	4.3	3.7	2.9	1.2
	10th Grade	4.3	3.7	2.9	1.2
	12th Grade	4.3	3.7	2.9	1.2
Female	8th Grade	4.4	3.6	2.2	1.2
	10th Grade	4.4	3.6	2.2	1.2
	12th Grade	4.4	3.6	2.2	1.2
College Plans:					
None or under 4 yrs.	8th Grade	2.2	2.0	1.6	1.2
	10th Grade	2.2	2.0	1.6	1.2
	12th Grade	2.2	2.0	1.6	1.2
Complete 4 years	8th Grade	6.0	4.4	3.0	1.2
	10th Grade	6.0	4.4	3.0	1.2
	12th Grade	6.0	4.4	3.0	1.2
Parental Education:					
Any stratum	8th Grade	2.4	2.1	1.7	1.2
	10th Grade	2.4	2.1	1.7	1.2
	12th Grade	2.4	2.1	1.7	1.2
Racial/Ethnic Group:					
White	8th Grade	5.3	4.8	3.5	1.5
	10th Grade	5.3	4.8	3.5	1.5
	12th Grade	5.3	4.8	3.5	1.5
Black	8th Grade	1.8	1.8	1.6	1.5
	10th Grade	1.8	1.8	1.6	1.5
	12th Grade	1.8	1.8	1.6	1.5
Hispanic	8th Grade	7.6	4.1	2.9	1.5
	10th Grade	7.6	4.1	2.9	1.5
	12th Grade	7.6	4.1	2.9	1.5

SOURCE: The Monitoring the Future Study, the University of Michigan.

TABLE C-2d

Design Effects for (a) a Prevalence or (b) a Change in Prevalence Across Nonadjacent Years

			HEROIN, CRACK COCAINE, STEROIDS, NITRITES, PCP, ICE, METHAQUALONE			
			Lifetime	Past 12 Months	Past 30 Days	Daily
SEGREGATED GROUPS:						
Total Sample: Any Region *(Northeast, North Central, South, and West);* Any Population Density Stratum *(Large MSA, Other MSA, and Non-MSA)*						
		8th Grade	2.0	1.5	1.5	1.2
		10th Grade	2.0	1.5	1.5	1.2
		12th Grade	2.0	1.5	1.5	1.2
CROSS-CLASS GROUPS:						
Gender:						
	Male	8th Grade	1.4	1.4	1.4	1.2
		10th Grade	1.4	1.4	1.4	1.2
		12th Grade	1.4	1.4	1.4	1.2
	Female	8th Grade	2.1	1.7	1.5	1.2
		10th Grade	2.1	1.7	1.5	1.2
		12th Grade	2.1	1.7	1.5	1.2
College Plans:						
	None or under 4 yrs.	8th Grade	1.6	1.6	1.6	1.2
		10th Grade	1.6	1.6	1.6	1.2
		12th Grade	1.6	1.6	1.6	1.2
	Complete 4 years	8th Grade	1.7	1.4	1.2	1.2
		10th Grade	1.7	1.4	1.2	1.2
		12th Grade	1.7	1.4	1.2	1.2
Parental Education:						
	Any stratum	8th Grade	1.4	1.4	1.4	1.2
		10th Grade	1.4	1.4	1.4	1.2
		12th Grade	1.4	1.4	1.4	1.2
Racial/Ethnic Group:						
	White	8th Grade	2.0	1.9	1.8	1.5
		10th Grade	2.0	1.9	1.8	1.5
		12th Grade	2.0	1.9	1.8	1.5
	Black	8th Grade	2.3	2.3	2.3	1.5
		10th Grade	2.3	2.3	2.3	1.5
		12th Grade	2.3	2.3	2.3	1.5
	Hispanic	8th Grade	2.5	2.0	1.9	1.5
		10th Grade	2.5	2.0	1.9	1.5
		12th Grade	2.5	2.0	1.9	1.5

SOURCE: The Monitoring the Future Study, the University of Michigan.

TABLE C-2e

Design Effects for (a) a Prevalence or (b) a Change in Prevalence Across Nonadjacent Years

		OPIATES OTHER THAN HEROIN, BARBITURATES, TRANQUILIZERS, HALLUCINOGENS OTHER THAN LSD, SEDATIVES			
		Lifetime	Past 12 Months	Past 30 Days	Daily
SEGREGATED GROUPS:					
Total Sample: Any Region *(Northeast, North Central, South, and West)*; Any Population Density Stratum *(Large MSA, Other MSA, and Non-MSA)*					
	8th Grade	2.9	2.6	1.7	1.2
	10th Grade	2.9	2.6	1.7	1.2
	12th Grade	2.9	2.6	1.7	1.2
CROSS-CLASS GROUPS:					
Gender:					
Male	8th Grade	2.4	2.4	1.9	1.2
	10th Grade	2.4	2.4	1.9	1.2
	12th Grade	2.4	2.4	1.9	1.2
Female	8th Grade	2.2	1.9	1.4	1.2
	10th Grade	2.2	1.9	1.4	1.2
	12th Grade	2.2	1.9	1.4	1.2
College Plans:					
None or under 4 yrs.	8th Grade	2.2	1.9	1.4	1.2
	10th Grade	2.2	1.9	1.4	1.2
	12th Grade	2.2	1.9	1.4	1.2
Complete 4 years	8th Grade	2.2	1.9	1.4	1.2
	10th Grade	2.2	1.9	1.4	1.2
	12th Grade	2.2	1.9	1.4	1.2
Parental Education:					
Any stratum	8th Grade	2.2	1.9	1.4	1.2
	10th Grade	2.2	1.9	1.4	1.2
	12th Grade	2.2	1.9	1.4	1.2
Racial/Ethnic Group:					
White	8th Grade	3.1	3.1	2.4	1.5
	10th Grade	3.1	3.1	2.4	1.5
	12th Grade	3.1	3.1	2.4	1.5
Black	8th Grade	1.9	1.9	1.8	1.5
	10th Grade	1.9	1.9	1.8	1.5
	12th Grade	1.9	1.9	1.8	1.5
Hispanic	8th Grade	2.0	1.8	1.6	1.5
	10th Grade	2.0	1.8	1.6	1.5
	12th Grade	2.0	1.8	1.6	1.5

SOURCE: The Monitoring the Future Study, the University of Michigan.

TABLE C-2f

Design Effects for (a) a Prevalence or (b) a Change in Prevalence Across Nonadjacent Years

		AMPHETAMINES, INHALANTS (UNADJUSTED AND ADJUSTED)			
		Lifetime	Past 12 Months	Past 30 Days	Daily
SEGREGATED GROUPS:					
Total Sample: Any Region *(Northeast, North Central, South, and West);* Any Population Density Stratum *(Large MSA, Other MSA, and Non-MSA)*					
	8th Grade	4.8	4.0	2.4	1.2
	10th Grade	4.8	4.0	2.4	1.2
	12th Grade	4.8	4.0	2.4	1.2
CROSS-CLASS GROUPS:					
Gender:					
Male	8th Grade	3.4	2.9	2.0	1.2
	10th Grade	3.4	2.9	2.0	1.2
	12th Grade	3.4	2.9	2.0	1.2
Female	8th Grade	3.5	3.4	2.1	1.2
	10th Grade	3.5	3.4	2.1	1.2
	12th Grade	3.5	3.4	2.1	1.2
College Plans:					
None or under 4 yrs.	8th Grade	2.1	1.8	1.5	1.2
	10th Grade	2.1	1.8	1.5	1.2
	12th Grade	2.1	1.8	1.5	1.2
Complete 4 years	8th Grade	4.0	3.5	2.3	1.2
	10th Grade	4.0	3.5	2.3	1.2
	12th Grade	4.0	3.5	2.3	1.2
Parental Education:					
Any stratum	8th Grade	2.3	2.1	1.6	1.2
	10th Grade	2.3	2.1	1.6	1.2
	12th Grade	2.3	2.1	1.6	1.2
Racial/Ethnic Group:					
White	8th Grade	4.1	4.0	2.3	1.5
	10th Grade	4.1	4.0	2.3	1.5
	12th Grade	4.1	4.0	2.3	1.5
Black	8th Grade	4.5	3.0	2.3	1.5
	10th Grade	4.5	3.0	2.3	1.5
	12th Grade	4.5	3.0	2.3	1.5
Hispanic	8th Grade	3.3	2.9	1.9	1.5
	10th Grade	3.3	2.9	1.9	1.5
	12th Grade	3.3	2.9	1.9	1.5

SOURCE: The Monitoring the Future Study, the University of Michigan.

TABLE C-2g

Design Effects for (a) a Prevalence or (b) a Change in Prevalence Across Nonadjacent Years

		ALCOHOL, BEEN DRUNK		CIGARETTES, SMOKELESS TOBACCO	
		Lifetime, Past 12 Months, Past 30 Days, 5+/2 Weeks	Daily	Lifetime, Past 30 Days, Daily	Half-pack or More per Day
SEGREGATED GROUPS:					
Total Sample: Any Region *(Northeast, North Central, South, and West)*; Any Population Density Stratum *(Large MSA, Other MSA, and Non-MSA)*					
	8th Grade	5.2	1.4	5.4	3.9
	10th Grade	5.2	1.4	5.4	3.9
	12th Grade	5.2	1.4	5.4	3.9
CROSS-CLASS GROUPS:					
Gender:					
Male	8th Grade	2.9	1.4	2.8	2.2
	10th Grade	2.9	1.4	2.8	2.2
	12th Grade	2.9	1.4	2.8	2.2
Female	8th Grade	4.2	1.4	5.1	3.3
	10th Grade	4.2	1.4	5.1	3.3
	12th Grade	4.2	1.4	5.1	3.3
College Plans:					
None or under 4 yrs.	8th Grade	2.5	1.4	2.3	2.2
	10th Grade	2.5	1.4	2.3	2.2
	12th Grade	2.5	1.4	2.3	2.2
Complete 4 years	8th Grade	4.3	1.4	4.3	2.7
	10th Grade	4.3	1.4	4.3	2.7
	12th Grade	4.3	1.4	4.3	2.7
Parental Education:					
Any stratum	8th Grade	2.3	1.4	2.4	2.0
	10th Grade	2.3	1.4	2.4	2.0
	12th Grade	2.3	1.4	2.4	2.0
Racial/Ethnic Group:					
White	8th Grade	4.5	1.8	4.6	3.3
	10th Grade	4.5	1.8	4.6	3.3
	12th Grade	4.5	1.8	4.6	3.3
Black	8th Grade	5.6	1.8	3.0	1.8
	10th Grade	5.6	1.8	3.0	1.8
	12th Grade	5.6	1.8	3.0	1.8
Hispanic	8th Grade	3.8	1.8	3.4	2.4
	10th Grade	3.8	1.8	3.4	2.4
	12th Grade	3.8	1.8	3.4	2.4

SOURCE: The Monitoring the Future Study, the University of Michigan.

TABLE C-3a
Design Effects for Subgroup Comparisons within Any Single Year

		INDEX OF ANY ILLICIT DRUGS OTHER THAN MARIJUANA			
		Lifetime	Past 12 Months	Past 30 Days	Daily
SEGREGATED GROUPS:					
Total Sample: Any Region *(Northeast, North Central, South, and West);* Any Population Density Stratum *(Large MSA, Other MSA, and Non-MSA)*					
	8th Grade	5.6	4.6	3.3	1.3
	10th Grade	6.2	5.0	3.4	1.4
	12th Grade	7.2	6.4	4.6	2.0
CROSS-CLASS GROUPS:					
Gender:					
Male	8th Grade	2.8	2.5	2.2	1.3
	10th Grade	3.1	2.7	2.4	1.2
	12th Grade	3.2	2.9	2.4	1.7
Female	8th Grade	3.1	2.8	2.1	1.2
	10th Grade	3.3	2.9	2.2	1.1
	12th Grade	3.5	3.3	2.8	1.6
College Plans:					
None or under 4 yrs.	8th Grade	2.0	1.9	1.6	1.2
	10th Grade	2.2	2.1	1.8	1.4
	12th Grade	2.1	1.9	1.6	1.5
Complete 4 years	8th Grade	3.5	2.8	2.3	1.2
	10th Grade	4.1	3.3	2.5	1.1
	12th Grade	4.4	3.8	3.0	1.7
Parental Education:					
Any stratum	8th Grade	2.1	2.0	1.6	1.1
	10th Grade	2.2	2.0	1.7	1.2
	12th Grade	2.4	2.2	1.7	1.4
Racial/Ethnic Group:					
White	8th Grade	3.6	3.4	2.8	1.8
	10th Grade	4.2	3.8	2.9	1.9
	12th Grade	3.7	3.6	2.8	2.2
Black	8th Grade	2.6	2.5	1.8	1.5
	10th Grade	2.9	2.6	2.4	1.6
	12th Grade	3.4	3.1	2.9	2.0
Hispanic	8th Grade	3.4	2.7	2.5	1.8
	10th Grade	4.0	2.8	2.3	1.6
	12th Grade	5.7	4.9	2.9	2.4

SOURCE: The Monitoring the Future Study, the University of Michigan.

TABLE C-3b
Design Effects for Subgroup Comparisons within Any Single Year

		INDICES OF ANY ILLICIT DRUG USE, ANY ILLICIT DRUG USE INCLUDING INHALANTS, AND MARIJUANA			
		Lifetime	Past 12 Months	Past 30 Days	Daily
SEGREGATED GROUPS:					
Total Sample: Any Region *(Northeast, North Central, South, and West)*; Any Population Density Stratum *(Large MSA, Other MSA, and Non-MSA)*					
	8th Grade	5.8	4.8	4.3	1.6
	10th Grade	7.5	6.2	4.7	1.7
	12th Grade	10.7	10.2	8.1	3.6
CROSS-CLASS GROUPS:					
Gender:					
Male	8th Grade	2.4	2.4	2.4	1.5
	10th Grade	3.4	3.0	3.0	1.5
	12th Grade	3.8	3.4	3.0	2.7
Female	8th Grade	3.4	3.0	2.4	1.3
	10th Grade	4.0	3.4	2.7	1.1
	12th Grade	4.6	4.6	4.5	2.6
College Plans:					
None or under 4 yrs.	8th Grade	2.3	2.3	2.0	1.3
	10th Grade	2.8	2.8	2.7	2.0
	12th Grade	2.4	2.4	2.1	2.1
Complete 4 years	8th Grade	3.3	2.4	2.4	1.5
	10th Grade	5.1	4.0	3.2	1.1
	12th Grade	6.1	5.3	4.5	3.0
Parental Education:					
Any stratum	8th Grade	2.1	2.1	1.9	1.1
	10th Grade	2.5	2.3	2.2	1.4
	12th Grade	3.0	2.8	2.3	1.9
Racial/Ethnic Group:					
White	8th Grade	4.0	3.9	3.7	2.1
	10th Grade	5.9	4.9	4.0	2.2
	12th Grade	4.3	4.3	3.7	3.4
Black	8th Grade	2.9	2.2	1.6	1.4
	10th Grade	3.6	3.6	2.6	1.9
	12th Grade	5.0	5.0	5.0	2.5
Hispanic	8th Grade	2.6	2.6	2.2	2.1
	10th Grade	4.2	2.9	2.0	1.9
	12th Grade	9.4	9.2	4.5	3.2

SOURCE: The Monitoring the Future Study, the University of Michigan.

TABLE C-3c
Design Effects for Subgroup Comparisons within Any Single Year

			HALLUCINOGENS (UNADJUSTED AND ADJUSTED), LSD, COCAINE, OTHER COCAINE			
			Lifetime	Past 12 Months	Past 30 Days	Daily
SEGREGATED GROUPS:						
Total Sample: Any Region *(Northeast, North Central, South, and West);* Any Population Density Stratum *(Large MSA, Other MSA, and Non-MSA)*						
		8th Grade	6.2	4.9	3.2	1.2
		10th Grade	6.2	4.9	3.2	1.2
		12th Grade	6.2	4.9	3.2	1.2
CROSS-CLASS GROUPS:						
Gender:						
	Male	8th Grade	3.2	2.8	2.4	1.1
		10th Grade	3.2	2.8	2.4	1.1
		12th Grade	3.2	2.8	2.4	1.1
	Female	8th Grade	3.2	2.8	2.0	1.1
		10th Grade	3.2	2.8	2.0	1.1
		12th Grade	3.2	2.8	2.0	1.1
College Plans:						
	None or under 4 yrs.	8th Grade	2.0	1.9	1.4	1.1
		10th Grade	2.0	1.9	1.4	1.1
		12th Grade	2.0	1.9	1.4	1.1
	Complete 4 years	8th Grade	4.2	3.2	2.4	1.1
		10th Grade	4.2	3.2	2.4	1.1
		12th Grade	4.2	3.2	2.4	1.1
Parental Education:						
	Any stratum	8th Grade	2.1	1.9	1.5	1.1
		10th Grade	2.1	1.9	1.5	1.1
		12th Grade	2.1	1.9	1.5	1.1
Racial/Ethnic Group:						
	White	8th Grade	3.7	3.4	2.7	1.5
		10th Grade	3.7	3.4	2.7	1.5
		12th Grade	3.7	3.4	2.7	1.5
	Black	8th Grade	1.8	1.8	1.6	1.5
		10th Grade	1.8	1.8	1.6	1.5
		12th Grade	1.8	1.8	1.6	1.5
	Hispanic	8th Grade	5.1	3.1	2.4	1.5
		10th Grade	5.1	3.1	2.4	1.5
		12th Grade	5.1	3.1	2.4	1.5

SOURCE: The Monitoring the Future Study, the University of Michigan.

TABLE C-3d
Design Effects for Subgroup Comparisons within Any Single Year

		HEROIN, CRACK COCAINE, STEROIDS, NITRITES, PCP, ICE, METHAQUALONE			
		Lifetime	Past 12 Months	Past 30 Days	Daily
SEGREGATED GROUPS:					
Total Sample: Any Region *(Northeast, North Central, South, and West);* Any Population Density Stratum *(Large MSA, Other MSA, and Non-MSA)*					
	8th Grade	2.0	1.5	1.5	1.2
	10th Grade	2.0	1.5	1.5	1.2
	12th Grade	2.0	1.5	1.5	1.2
CROSS-CLASS GROUPS:					
Gender:					
Male	8th Grade	1.3	1.3	1.3	1.1
	10th Grade	1.3	1.3	1.3	1.1
	12th Grade	1.3	1.3	1.3	1.1
Female	8th Grade	1.9	1.5	1.3	1.1
	10th Grade	1.9	1.5	1.3	1.1
	12th Grade	1.9	1.5	1.3	1.1
College Plans:					
None or under 4 yrs.	8th Grade	1.4	1.4	1.4	1.1
	10th Grade	1.4	1.4	1.4	1.1
	12th Grade	1.4	1.4	1.4	1.1
Complete 4 years	8th Grade	1.5	1.3	1.1	1.1
	10th Grade	1.5	1.3	1.1	1.1
	12th Grade	1.5	1.3	1.1	1.1
Parental Education:					
Any stratum	8th Grade	1.3	1.3	1.3	1.1
	10th Grade	1.3	1.3	1.3	1.1
	12th Grade	1.3	1.3	1.3	1.1
Racial/Ethnic Group:					
White	8th Grade	2.0	1.9	1.8	1.5
	10th Grade	2.0	1.9	1.8	1.5
	12th Grade	2.0	1.9	1.8	1.5
Black	8th Grade	2.0	2.0	2.0	1.5
	10th Grade	2.0	2.0	2.0	1.5
	12th Grade	2.0	2.0	2.0	1.5
Hispanic	8th Grade	2.1	2.0	1.9	1.5
	10th Grade	2.1	2.0	1.9	1.5
	12th Grade	2.1	2.0	1.9	1.5

SOURCE: The Monitoring the Future Study, the University of Michigan.

TABLE C-3e
Design Effects for Subgroup Comparisons within Any Single Year

		OPIATES OTHER THAN HEROIN, BARBITURATES, TRANQUILIZERS, HALLUCINOGENS OTHER THAN LSD, SEDATIVES			
		Lifetime	Past 12 Months	Past 30 Days	Daily
SEGREGATED GROUPS:					
Total Sample: Any Region *(Northeast, North Central, South, and West);* Any Population Density Stratum *(Large MSA, Other MSA, and Non-MSA)*					
	8th Grade	2.9	2.6	1.7	1.2
	10th Grade	2.9	2.6	1.7	1.2
	12th Grade	2.9	2.6	1.7	1.2
CROSS-CLASS GROUPS:					
Gender:					
Male	8th Grade	2.1	2.1	1.6	1.1
	10th Grade	2.1	2.1	1.6	1.1
	12th Grade	2.1	2.1	1.6	1.1
Female	8th Grade	2.0	1.6	1.3	1.1
	10th Grade	2.0	1.6	1.3	1.1
	12th Grade	2.0	1.6	1.3	1.1
College Plans:					
None or under 4 yrs.	8th Grade	2.0	1.6	1.3	1.1
	10th Grade	2.0	1.6	1.3	1.1
	12th Grade	2.0	1.6	1.3	1.1
Complete 4 years	8th Grade	2.0	1.6	1.3	1.1
	10th Grade	2.0	1.6	1.3	1.1
	12th Grade	2.0	1.6	1.3	1.1
Parental Education:					
Any stratum	8th Grade	2.0	1.6	1.3	1.1
	10th Grade	2.0	1.6	1.3	1.1
	12th Grade	2.0	1.6	1.3	1.1
Racial/Ethnic Group:					
White	8th Grade	2.5	2.5	2.1	1.5
	10th Grade	2.5	2.5	2.1	1.5
	12th Grade	2.5	2.5	2.1	1.5
Black	8th Grade	1.9	1.9	1.8	1.5
	10th Grade	1.9	1.9	1.8	1.5
	12th Grade	1.9	1.9	1.8	1.5
Hispanic	8th Grade	2.0	1.8	1.6	1.5
	10th Grade	2.0	1.8	1.6	1.5
	12th Grade	2.0	1.8	1.6	1.5

SOURCE: The Monitoring the Future Study, the University of Michigan.

TABLE C-3f

Design Effects for Subgroup Comparisons within Any Single Year

		AMPHETAMINES, INHALANTS (UNADJUSTED AND ADJUSTED)			
		Lifetime	Past 12 Months	Past 30 Days	Daily
SEGREGATED GROUPS:					
Total Sample: Any Region *(Northeast, North Central, South, and West);* Any Population Density Stratum *(Large MSA, Other MSA, and Non-MSA)*					
	8th Grade	4.8	4.0	2.4	1.2
	10th Grade	4.8	4.0	2.4	1.2
	12th Grade	4.8	4.0	2.4	1.2
CROSS-CLASS GROUPS:					
Gender:					
Male	8th Grade	2.7	2.4	1.9	1.1
	10th Grade	2.7	2.4	1.9	1.1
	12th Grade	2.7	2.4	1.9	1.1
Female	8th Grade	2.7	2.7	1.9	1.1
	10th Grade	2.7	2.7	1.9	1.1
	12th Grade	2.7	2.7	1.9	1.1
College Plans:					
None or under 4 yrs.	8th Grade	1.9	1.5	1.3	1.1
	10th Grade	1.9	1.5	1.3	1.1
	12th Grade	1.9	1.5	1.3	1.1
Complete 4 years	8th Grade	3.0	2.7	2.0	1.1
	10th Grade	3.0	2.7	2.0	1.1
	12th Grade	3.0	2.7	2.0	1.1
Parental Education:					
Any stratum	8th Grade	2.0	1.9	1.4	1.1
	10th Grade	2.0	1.9	1.4	1.1
	12th Grade	2.0	1.9	1.4	1.1
Racial/Ethnic Group:					
White	8th Grade	3.1	3.0	2.0	1.5
	10th Grade	3.1	3.0	2.0	1.5
	12th Grade	3.1	3.0	2.0	1.5
Black	8th Grade	3.3	2.4	2.0	1.5
	10th Grade	3.3	2.4	2.0	1.5
	12th Grade	3.3	2.4	2.0	1.5
Hispanic	8th Grade	2.6	2.4	1.9	1.5
	10th Grade	2.6	2.4	1.9	1.5
	12th Grade	2.6	2.4	1.9	1.5

SOURCE: The Monitoring the Future Study, the University of Michigan.

TABLE C-3g

Design Effects for Subgroup Comparisons within Any Single Year

		ALCOHOL, BEEN DRUNK		CIGARETTES, SMOKELESS TOBACCO	
		Lifetime, Past 12 Months, Past 30 Days, 5+/2 Weeks	Daily	Lifetime, Past 30 Days, Daily	Half-pack or More per Day
SEGREGATED GROUPS:					
Total Sample: Any Region *(Northeast, North Central, South, and West)*; Any Population Density Stratum *(Large MSA, Other MSA, and Non-MSA)*					
	8th Grade	5.2	1.4	5.4	3.9
	10th Grade	5.2	1.4	5.4	3.9
	12th Grade	5.2	1.4	5.4	3.9
CROSS-CLASS GROUPS:					
Gender:					
Male	8th Grade	2.4	1.3	2.3	2.0
	10th Grade	2.4	1.3	2.3	2.0
	12th Grade	2.4	1.3	2.3	2.0
Female	8th Grade	3.1	1.3	3.6	2.6
	10th Grade	3.1	1.3	3.6	2.6
	12th Grade	3.1	1.3	3.6	2.6
College Plans:					
None or under 4 yrs.	8th Grade	2.1	1.3	2.0	2.0
	10th Grade	2.1	1.3	2.0	2.0
	12th Grade	2.1	1.3	2.0	2.0
Complete 4 years	8th Grade	3.2	1.3	3.2	2.3
	10th Grade	3.2	1.3	3.2	2.3
	12th Grade	3.2	1.3	3.2	2.3
Parental Education:					
Any stratum	8th Grade	2.0	1.3	2.1	1.9
	10th Grade	2.0	1.3	2.1	1.9
	12th Grade	2.0	1.3	2.1	1.9
Racial/Ethnic Group:					
White	8th Grade	3.3	1.8	3.4	2.6
	10th Grade	3.3	1.8	3.4	2.6
	12th Grade	3.3	1.8	3.4	2.6
Black	8th Grade	4.0	1.8	2.4	1.8
	10th Grade	4.0	1.8	2.4	1.8
	12th Grade	4.0	1.8	2.4	1.8
Hispanic	8th Grade	2.9	1.8	2.7	2.1
	10th Grade	2.9	1.8	2.7	2.1
	12th Grade	2.9	1.8	2.7	2.1

SOURCE: The Monitoring the Future Study, the University of Michigan.

Appendix D

SUPPLEMENTAL TABLES FOR SECONDARY SCHOOL STUDENTS: TRENDS BY SUBGROUP

Trend data for the population subgroups discussed in this volume (defined by sex, college plans, region, community size, level of parental education, and racial/ethnic distinctions) are presented below for the major classes of licit and illicit drugs. Because of the sheer quantity of information such trend tables generate, we have selected the prevalence periods which seem most useful for understanding differences by subgroup. For most drugs, the trends are given only for annual prevalence. Other prevalence rates are provided for alcohol, cigarettes, and smokeless tobacco.

The subgroups are the standard ones used throughout this volume and are operationally defined in Appendix B. The reader should note that *two-year moving averages* are given for the three racial/ethnic groups described, in order to damp down random fluctuations in the trends for the minority groups. A footnote in each table describes the procedure.

For nearly all drugs there is one table presenting the subgroup trends for eighth and tenth grade students and a second table giving the longer-term trends for twelfth grade students. However, for two of the drugs—barbiturates and narcotics other than heroin—the eighth and tenth grade data have been omitted, as they are throughout the volume, because we are less certain about the validity of the answers provided by the younger students. Specifically, we believe that they often fail to omit substances which should be omitted (i.e., non-prescription substances).

Sample sizes should be taken into account when interpreting the importance of any changes observed, of course. They are provided in the last two pages of the appendix.

TABLE D-1
Marijuana: Trends in Annual Prevalence of Use by Subgroups for Eighth and Tenth Graders

Percent who used in last twleve months

	8th Grade								10th Grade							
	1991	1992	1993	1994	1995	1996	1997	'96–'97 change	1991	1992	1993	1994	1995	1996	1997	'96–'97 change
Approx. N =	17500	18600	18300	17300	17500	17800	18600		14800	14800	15300	15800	17000	15600	15500	
Total	6.2	7.2	9.2	13.0	15.8	18.3	17.7	-0.6	16.5	15.2	19.2	25.2	28.7	33.6	34.8	+1.2
Sex:																
Male	7.3	7.4	10.5	15.1	17.7	19.6	19.2	-0.4	17.7	16.3	21.2	28.2	30.6	36.0	37.3	+1.3
Female	5.1	6.9	8.0	10.9	13.7	16.9	16.1	-0.8	15.1	13.9	16.9	21.9	26.5	31.4	32.3	+0.9
College Plans:																
None or under 4 yrs.	15.8	17.5	22.4	27.7	30.3	34.6	34.5	-0.1	26.9	25.1	31.5	37.3	41.8	48.9	51.5	+2.6
Complete 4 yrs.	4.6	5.5	7.3	11.0	13.8	15.8	15.5	-0.3	14.2	13.0	16.5	22.4	26.4	31.0	32.0	+1.0
Region:																
Northeast	5.0	5.8	6.2	12.1	13.0	15.3	16.2	+0.9	17.1	14.9	22.4	25.6	28.8	34.8	34.6	-0.2
North Central	5.9	6.0	8.0	12.0	17.5	18.6	17.0	-1.6	15.8	14.8	17.4	23.4	26.6	33.1	34.4	+1.3
South	6.1	7.3	9.0	11.4	14.7	17.1	17.2	+0.1	14.5	12.5	16.4	23.8	28.4	33.9	34.4	+0.5
West	7.8	10.3	14.8	18.1	18.4	22.5	20.6	-1.9	19.4	20.4	24.0	30.0	32.2	32.4	36.5	+4.1
Population Density:																
Large MSA	5.2	6.7	8.0	13.1	15.6	18.3	16.4	-1.9	16.5	15.1	19.0	26.3	27.8	31.5	34.1	+2.6
Other MSA	7.2	8.3	10.9	15.7	17.2	19.5	18.2	-1.3	17.3	15.9	19.8	28.2	31.2	36.2	36.6	+0.4
Non-MSA	5.3	5.7	7.2	8.0	13.7	15.8	18.0	+2.2	14.9	13.9	18.2	18.6	24.8	30.9	32.5	+1.6
Parental Education:[a]																
1.0-2.0 (Low)	13.2	12.7	13.6	18.7	23.0	20.2	24.8	+4.6s	20.3	18.9	22.4	25.8	32.0	32.9	34.5	+1.6
2.5-3.0	7.0	7.7	10.7	14.5	17.9	20.6	20.3	-0.3	17.8	16.0	19.7	26.3	31.8	35.6	36.8	+1.2
3.5-4.0	6.2	7.0	9.7	13.2	17.2	20.2	19.5	-0.7	16.2	15.1	19.3	25.6	30.0	36.4	37.8	+1.4
4.5-5.0	3.7	5.4	7.4	10.9	12.7	16.2	15.7	-0.5	14.9	14.1	17.6	23.8	27.0	31.7	33.1	+1.4
5.5-6.0 (High)	4.6	5.2	6.4	11.0	13.0	14.7	12.1	-2.6	15.9	13.7	18.5	23.3	23.4	30.3	30.5	+0.2
Race (2-year average):[b]																
White	—	6.4	7.8	10.0	13.5	16.7	17.8	+1.1	—	17.0	18.0	22.6	27.7	32.0	35.3	+3.3s
Black	—	4.1	5.7	8.9	11.9	14.0	15.3	+1.3	—	7.6	8.7	15.3	20.9	25.7	28.4	+2.7
Hispanic	—	11.9	13.9	18.1	20.4	20.8	21.8	+1.0	—	18.9	21.3	25.1	29.2	34.6	36.8	+2.2

NOTES: Level of significance of difference between the two most recent classes: s = .05, ss = .01, sss = .001.
'—' indicates data not available.
See Table D-39 for the number of subgroup cases.
See Appendix B for definition of variables in table.

SOURCE: The Monitoring the Future Study, the University of Michigan.

[a] Parental education is an average score of mother's education and father's education. See Appendix B for details.

[b] To derive percentages for each racial subgroup, data for the specified year *and* the previous year have been combined to increase subgroup sample sizes and thus provide more stable estimates.

TABLE D-2
Marijuana: Trends in Annual Prevalence of Use by Subgroups for Twelfth Graders

	Percent who used in last twelve months																							
	Class of 1975	Class of 1976	Class of 1977	Class of 1978	Class of 1979	Class of 1980	Class of 1981	Class of 1982	Class of 1983	Class of 1984	Class of 1985	Class of 1986	Class of 1987	Class of 1988	Class of 1989	Class of 1990	Class of 1991	Class of 1992	Class of 1993	Class of 1994	Class of 1995	Class of 1996	Class of 1997	'96–'97 change
Approx. N =	9400	15400	17100	17800	15500	15900	17500	17700	16300	15900	16000	15200	16300	16300	16700	15200	15000	15800	16300	15400	15400	14300	15400	
Total	40.0	44.5	47.6	50.2	50.8	48.8	46.1	44.3	42.3	40.0	40.6	38.8	36.3	33.1	29.6	27.0	23.9	21.9	26.0	30.7	34.7	35.8	38.5	+2.7
Sex:																								
Male	45.8	50.6	53.2	55.9	55.8	53.4	49.2	47.2	45.7	43.2	43.1	41.2	38.6	35.8	32.8	29.4	27.2	24.4	29.0	35.1	38.1	39.4	40.9	+1.5
Female	34.9	37.8	42.0	44.3	45.7	44.1	42.5	40.8	38.4	36.0	37.8	36.0	33.8	30.3	26.3	24.2	20.1	18.9	22.4	26.4	30.6	31.6	35.5	+3.9s
College Plans:																								
None or under 4 yrs.		46.8	50.7	51.6	53.1	51.7	49.7	48.2	46.0	44.2	44.0	42.7	40.6	36.2	34.4	31.1	27.6	27.5	29.1	34.4	39.0	41.7	44.6	+2.9
Complete 4 yrs.	—	40.7	43.4	47.1	47.3	45.9	42.6	40.6	38.3	35.9	37.5	36.1	34.0	31.3	27.3	24.7	22.0	19.4	24.4	29.1	32.6	33.4	36.4	+3.0s
Region:																								
Northeast	47.4	52.7	53.5	59.2	60.6	55.5	53.2	50.9	49.3	49.6	48.2	44.6	41.2	36.7	31.3	32.2	28.2	23.9	31.2	36.0	37.7	40.0	43.5	+3.5
North Central	40.1	44.0	48.1	51.6	52.2	48.9	46.8	45.6	42.0	36.4	40.8	40.2	37.4	34.3	33.0	28.7	26.1	22.7	26.0	30.5	36.9	36.9	36.5	-0.4
South	32.4	37.9	42.5	42.7	41.2	42.0	38.0	36.7	36.1	35.6	31.0	31.7	30.2	28.7	25.0	21.4	18.1	18.1	23.2	28.7	31.8	32.8	35.0	+2.2
West	44.1	45.8	46.8	49.1	51.9	51.7	49.6	45.5	44.8	43.2	46.2	41.2	39.6	35.6	32.3	28.3	26.8	26.1	26.4	30.0	33.8	35.6	42.6	+7.0s
Population Density:																								
Large MSA	50.4	51.3	53.2	57.2	58.7	56.3	51.4	50.4	47.0	44.2	44.4	42.6	39.3	34.3	27.8	27.7	24.3	22.6	29.1	32.0	37.5	37.2	38.3	+1.1
Other MSA	40.3	44.2	48.9	50.8	51.9	49.8	46.4	44.8	44.0	41.0	40.7	39.4	36.9	34.7	30.3	28.3	27.5	22.1	26.2	32.7	34.9	38.6	40.5	+1.9
Non-MSA	32.9	39.8	41.2	43.3	43.3	41.9	41.6	38.5	36.5	35.3	37.3	34.7	32.2	29.0	30.0	23.5	17.5	21.0	23.1	25.8	31.0	29.6	34.9	+5.3
Parental Education:[a]																								
1.0-2.0 (Low)	35.2	38.9	41.0	42.5	46.0	43.7	41.8	38.9	39.7	35.7	37.1	33.4	30.7	30.7	23.3	21.0	22.4	21.2	23.0	26.3	30.9	31.3	34.8	+3.5
2.5-3.0	39.2	46.1	48.2	50.3	50.0	49.0	45.3	44.5	42.2	40.1	40.6	38.8	36.3	31.1	29.6	26.9	22.5	21.1	24.1	29.7	33.8	35.1	37.4	+2.3
3.5-4.0	38.5	44.9	49.5	51.4	52.7	49.8	47.0	46.5	42.2	41.4	41.0	40.1	36.8	33.4	31.4	27.6	24.0	22.7	26.6	31.5	34.2	36.1	38.1	+2.0
4.5-5.0	40.6	46.8	49.3	53.2	53.7	50.5	47.6	45.9	43.5	39.6	43.2	39.9	37.5	35.1	29.7	28.5	23.8	20.8	27.2	32.0	35.0	36.6	40.1	+3.5
5.5-6.0 (High)	38.7	47.5	48.6	55.2	51.2	52.0	48.5	45.7	43.7	39.9	37.9	38.9	38.6	35.9	30.7	29.4	28.2	22.6	28.0	32.3	37.5	36.7	39.7	+3.0
Race (2-year average):[b]																								
White	—	—	46.8	50.1	51.8	51.2	49.1	47.1	44.6	42.0	41.6	41.4	39.7	37.6	34.5	31.6	28.2	24.9	25.9	30.2	34.2	36.4	38.7	+2.3
Black	—	—	37.9	39.6	38.4	37.5	36.1	35.5	37.4	36.4	33.4	30.6	25.7	21.2	17.8	13.7	11.4	11.5	14.2	20.7	26.8	30.2	30.4	+0.2
Hispanic	—	—	45.8	43.4	42.1	44.1	41.2	38.8	38.3	38.8	37.8	36.7	33.3	29.6	25.0	21.6	23.6	24.7	23.5	25.7	29.7	32.3	36.4	+4.1

NOTES: Level of significance of difference between the two most recent classes: s = .05, ss = .01, sss = .001. '—' indicates data not available.
See Table D-40 for the number of subgroup cases.
See Appendix B for definition of variables in table.

SOURCE: The Monitoring the Future Study, the University of Michigan.

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[a] Parental education is an average score of mother's education and father's education. See Appendix B for details.

[b] To derive percentages for each racial subgroup, data for the specified *year* *and* the previous year have been combined to increase subgroup sample sizes and thus provide more stable estimates.

TABLE D-3
Inhalants: Trends in Annual Prevalence of Use by Subgroups for Eighth and Tenth Graders

Percent who used in last twelve months

	8th Grade								10th Grade							
	1991	1992	1993	1994	1995	1996	1997	'96–'97 change	1991	1992	1993	1994	1995	1996	1997	'96–'97 change
Approx. N =	17500	18600	18300	17300	17500	17800	18600		14800	14800	15300	15800	17000	15600	15500	
Total	9.0	9.5	11.0	11.7	12.8	12.2	11.8	-0.4	7.1	7.5	8.4	9.1	9.6	9.5	8.7	0.8
Sex:																
Male	9.0	9.2	10.4	11.2	11.5	10.3	10.5	+0.2	7.4	7.6	9.1	9.7	10.3	10.1	9.1	-1.0
Female	9.0	9.8	11.9	12.2	14.0	14.1	12.9	-1.2	6.6	7.5	7.7	8.6	8.9	8.9	8.2	-0.7
College Plans:																
None or under 4 yrs	15.0	15.6	17.7	18.3	19.6	18.2	18.1	-0.1	12.0	12.4	14.0	15.1	14.6	14.3	14.4	+0.1
Complete 4 yrs	8.1	8.8	10.2	10.9	11.9	11.4	11.2	-0.2	5.9	6.4	7.3	7.8	8.7	8.7	7.7	-1.0
Region:																
Northeast	8.0	8.6	11.3	12.0	13.1	11.7	12.1	+0.4	7.2	7.8	10.6	9.8	10.4	11.5	8.9	-2.6s
North Central	9.8	10.5	9.9	10.3	13.8	13.3	11.3	-2.0	7.5	8.0	8.3	8.4	10.4	9.8	8.3	-1.5
South	8.9	9.1	10.0	11.3	12.1	11.3	11.6	+0.3	7.2	6.6	7.3	9.0	9.4	9.1	8.8	-0.3
West	8.8	9.8	14.2	14.0	12.4	12.9	12.6	-0.3	6.2	8.0	8.4	9.9	8.1	8.0	8.5	+0.5
Population Density:																
Large MSA	9.9	9.1	10.8	11.6	11.7	11.4	10.4	-1.0	7.7	7.8	8.5	7.9	8.7	8.1	8.1	0.0
Other MSA	8.5	10.3	12.3	13.1	13.7	13.4	11.5	-1.9s	7.1	7.4	8.4	9.8	9.7	9.6	8.4	-1.2
Non-MSA	9.1	8.6	8.5	9.3	12.3	11.0	13.9	+2.9s	6.5	7.5	8.6	9.1	10.5	11.0	9.8	-1.2
Parental Education:[a]																
1.0-2.0 (Low)	12.0	11.4	11.5	12.4	13.0	11.3	12.1	+0.8	7.0	8.2	10.2	8.7	9.4	10.8	9.3	-1.5
2.5-3.0	9.5	9.9	10.9	12.1	13.9	12.6	12.6	0.0	8.0	7.9	9.1	9.5	11.0	9.9	8.5	-1.4
3.5-4.0	8.9	10.0	11.5	12.3	14.7	13.4	13.5	+0.1	7.5	8.3	8.3	9.6	10.2	10.1	9.4	-0.7
4.5-5.0	8.0	8.4	10.6	11.0	12.3	13.2	11.4	-1.8	6.4	6.5	7.2	8.7	9.4	8.4	8.3	-0.1
5.5-6.0 (High)	8.4	10.3	12.6	12.2	11.6	11.7	10.8	-0.9	6.6	6.7	8.2	8.2	7.0	10.1	8.2	-1.9
Race (2-year average):[b]																
White	—	10.1	11.3	12.4	13.8	14.6	14.1	-0.5	—	8.3	8.8	9.6	10.6	11.0	10.4	-0.6
Black	—	4.4	4.6	5.3	5.0	4.2	3.8	-0.4	—	3.6	3.7	3.3	2.8	2.3	2.3	0.0
Hispanic	—	10.4	11.5	12.5	13.3	12.7	11.4	-1.3	—	6.4	8.3	9.0	8.5	8.2	7.9	-0.3

NOTES: Level of significance of difference between the two most recent classes: s = .05, ss = .01, sss = .001.
'—' indicates data not available.
See Table D-39 for the number of subgroup cases.
See Appendix B for definition of variables in table.

SOURCE: The Monitoring the Future Study, the University of Michigan.

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[a] Parental education is an average score of mother's education and father's education. See Appendix B for details.

[b] To derive percentages for each racial subgroup, data for the specified year *and* the previous year have been combined to increase subgroup sample sizes and thus provide more stable estimates.

TABLE D-4
Inhalants:[a] Trends in Annual Prevalence of Use by Subgroups for Twelfth Graders

	Percent who used in last twelve months																							
	Class of 1975	Class of 1976	Class of 1977	Class of 1978	Class of 1979	Class of 1980	Class of 1981	Class of 1982	Class of 1983	Class of 1984	Class of 1985	Class of 1986	Class of 1987	Class of 1988	Class of 1989	Class of 1990	Class of 1991	Class of 1992	Class of 1993	Class of 1994	Class of 1995	Class of 1996	Class of 1997	'96–'97 change
Approx. N =	9400	15400	17100	17800	15500	15900	17500	17700	16300	15900	16000	15200	16300	16300	16700	15200	15000	15800	16300	15400	15400	14300	15400	
Total	—	3.0	3.7	4.1	5.4	4.6	4.1	4.5	4.3	5.1	5.7	6.1	6.9	6.5	5.9	6.9	6.6	6.2	7.0	7.7	8.0	7.6	6.7	-0.9
Adjusted[b]	—	—	—	—	8.9	7.9	6.1	6.6	6.2	7.2	7.5	8.9	8.1	7.1	6.9	7.5	6.9	6.4	7.4	8.2	8.4	8.5	7.3	-1.2
Sex:																								
Male	—	3.8	5.1	5.6	6.7	5.9	5.1	5.8	5.8	6.5	6.9	7.8	8.3	8.2	7.8	8.8	8.2	8.0	9.2	9.6	9.9	9.1	8.3	-0.8
Female	—	2.0	2.4	2.8	4.2	3.5	3.2	3.1	2.8	3.8	4.5	4.7	5.6	4.9	4.0	4.9	5.0	4.5	4.8	6.0	6.2	6.1	5.2	-0.9
College Plans:																								
None or under 4 yrs.	—	3.6	4.7	5.0	6.3	5.0	4.3	4.9	4.7	5.8	5.8	7.7	8.0	8.1	7.1	7.8	7.7	7.7	8.0	9.0	9.7	8.2	8.0	-0.2
Complete 4 yrs.	—	2.2	2.9	3.4	4.5	4.3	4.0	4.1	3.9	4.7	5.7	5.2	6.4	6.0	5.4	6.4	6.3	5.7	6.7	7.4	7.4	7.3	6.5	-0.8
Region:																								
Northeast	—	3.2	4.1	4.4	6.4	6.0	5.2	6.2	5.0	6.1	8.0	5.6	6.7	6.0	6.3	7.4	6.7	6.0	8.9	10.3	10.3	10.8	9.4	-1.4
North Central	—	2.6	4.2	4.8	5.9	4.6	3.8	3.6	4.5	5.0	5.8	6.7	8.6	7.2	6.7	8.0	8.6	7.4	6.3	9.5	8.6	7.6	6.9	-0.7
South	—	3.8	3.3	3.6	4.3	3.4	3.2	3.8	3.8	4.6	4.2	5.7	6.1	6.8	5.5	6.4	5.0	4.8	6.5	6.2	7.0	6.5	5.6	-0.9
West	—	1.7	3.0	3.6	4.9	4.9	4.7	4.4	4.3	5.3	5.4	6.6	6.2	5.6	4.8	5.7	6.8	7.5	7.0	5.7	6.7	6.0	5.4	-0.6
Population Density:																								
Large MSA	—	2.9	3.4	3.4	5.1	5.7	4.7	5.5	4.8	5.3	5.9	5.2	6.0	6.5	5.1	6.7	5.2	6.0	7.4	7.6	8.5	7.8	5.9	-1.9
Other MSA	—	2.6	3.6	3.7	4.8	4.2	4.0	3.9	4.4	5.0	5.9	6.3	6.9	6.0	5.8	6.8	7.8	6.6	7.3	7.7	7.8	7.9	6.5	-1.4
Non-MSA	—	3.4	4.2	5.3	6.2	4.4	3.7	4.4	3.9	5.2	5.4	6.6	7.8	7.5	6.8	7.4	5.8	5.6	6.0	7.6	7.8	7.0	8.1	+1.1
Parental Education:[c]																								
1.0-2.0 (Low)	—	3.7	3.9	4.5	5.2	3.8	3.6	3.2	3.1	4.5	4.2	4.9	4.6	5.3	5.9	5.0	6.1	4.2	4.3	5.3	7.5	5.8	5.4	-0.4
2.5-3.0	—	3.1	4.1	4.0	5.0	4.8	4.0	4.8	4.0	5.2	5.6	6.1	6.8	6.3	5.5	6.9	6.6	6.7	6.0	7.8	8.0	7.9	6.3	-1.6
3.5-4.0	—	3.1	3.4	4.1	5.1	4.7	4.0	4.6	4.9	5.6	5.5	6.2	7.1	5.8	6.1	7.2	6.1	6.3	7.7	7.1	6.7	7.8	7.1	-0.7
4.5-5.0	—	2.7	3.0	3.9	5.8	4.3	4.4	4.4	5.2	5.0	7.0	6.9	7.2	7.0	5.7	7.4	7.4	6.3	7.6	8.9	8.9	7.4	7.9	+0.5
5.5-6.0 (High)	—	3.7	4.2	5.0	7.2	5.8	4.9	6.0	4.7	5.6	6.8	6.4	8.7	9.1	6.8	7.6	7.1	6.7	9.4	9.7	9.7	8.5	6.0	-2.5s
Race (2-year average):[d]																								
White	—	—	3.6	4.3	5.1	5.3	4.7	4.7	4.8	5.1	5.9	6.5	7.3	7.6	7.0	7.2	7.6	7.2	7.6	8.6	9.1	9.0	8.6	-0.4
Black	—	—	1.5	1.3	2.1	2.2	2.1	1.9	1.8	2.2	2.0	2.1	3.0	3.1	2.2	2.1	2.7	2.5	2.2	2.4	2.6	2.2	1.9	-0.3
Hispanic	—	—	2.7	3.0	2.9	2.9	3.5	4.1	3.4	4.6	6.5	5.5	4.6	4.1	4.7	4.8	5.4	6.0	5.7	5.5	5.8	5.9	4.7	-1.2

NOTES: Level of significance of difference between the two most recent classes: s = .05, ss = .01, sss = .001. '—' indicates data not available.
See Table D-40 for the number of subgroup cases.
See Appendix B for definition of variables in table.
Data based on four of five forms in 1976-88; N is four-fifths of N indicated. Data based on five of six forms in 1989-97; N is five-sixths of N indicated.

SOURCE: The Monitoring the Future Study, the University of Michigan.

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[a] All data are unadjusted for underreporting of amyl and butyl nitrites, except where otherwise noted.

[b] Adjusted for underreporting of amyl and butyl nitrites. See text for details.

[c] Parental education is an average score of mother's education and father's education. See Appendix B for details.

[d] To derive percentages for each racial subgroup, data for the specified year *and* the previous year have been combined to increase subgroup sample sizes and thus provide more stable estimates.

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TABLE D-5
Hallucinogens: Trends in Annual Prevalence of Use by Subgroups for Eighth and Tenth Graders

Percent who used in last twelve months

	8th Grade								10th Grade							
	1991	1992	1993	1994	1995	1996	1997	'96–'97 change	1991	1992	1993	1994	1995	1996	1997	'96–'97 change
Approx. N =	17500	18600	18300	17300	17500	17800	18600		14800	14800	15300	15800	17000	15600	15500	
Total	1.9	2.5	2.6	2.7	3.6	4.1	3.7	-0.4	4.0	4.3	4.7	5.8	7.2	7.8	7.6	-0.2
Sex:																
Male	2.2	2.6	2.8	3.0	4.0	4.3	4.0	-0.3	4.4	4.7	5.7	6.6	8.1	8.5	8.7	+0.2
Female	1.6	2.3	2.3	2.4	3.3	3.7	3.2	-0.5	3.6	3.8	3.6	4.8	6.1	7.0	6.4	-0.6
College Plans:																
None or under 4 yrs.	5.1	7.2	7.1	6.7	9.6	9.6	10.1	+0.5	7.5	7.5	9.1	10.4	12.5	14.5	13.6	-0.9
Complete 4 yrs.	1.4	1.8	1.9	2.2	2.9	3.2	2.9	-0.3	3.3	3.6	3.7	4.8	6.2	6.6	6.5	-0.1
Region:																
Northeast	1.5	1.6	1.9	2.9	3.4	3.7	2.8	-0.9	4.0	2.7	4.7	5.8	5.6	7.7	6.2	-1.5
North Central	1.6	2.4	1.7	2.2	3.8	3.9	3.8	-0.1	3.4	4.3	4.6	5.7	7.8	9.0	7.0	-2.0
South	1.9	2.7	2.8	2.4	3.3	3.9	3.4	-0.5	3.6	3.9	3.6	5.1	7.3	7.5	8.3	+0.8
West	2.8	3.2	4.2	3.9	4.2	5.1	4.8	-0.3	5.2	6.5	6.7	7.1	7.6	6.6	8.5	+1.9
Population Density:																
Large MSA	2.1	2.2	2.2	3.1	4.0	3.8	3.3	-0.5	4.1	4.6	4.9	6.0	7.1	8.6	7.8	-0.8
Other MSA	2.0	3.0	3.1	3.1	3.8	4.8	4.0	-0.8	4.8	4.4	4.9	6.4	8.0	8.2	7.9	-0.3
Non-MSA	1.5	2.0	1.8	1.6	3.0	3.2	3.5	+0.3	2.5	3.7	4.1	4.4	5.5	6.0	6.7	+0.7
Parental Education:[a]																
1.0-2.0 (Low)	3.9	3.7	3.5	3.1	5.1	4.8	5.0	+0.2	3.7	4.9	6.0	6.1	7.7	8.0	6.5	-1.5
2.5-3.0	2.2	2.3	2.7	2.8	3.8	4.7	3.9	-0.8	4.3	4.2	4.5	5.5	7.6	8.5	7.3	-1.2
3.5-4.0	1.6	2.5	2.8	2.8	4.1	4.1	3.8	-0.3	3.7	4.6	4.8	5.9	7.6	8.6	8.2	-0.4
4.5-5.0	1.6	2.0	2.3	2.8	3.2	4.0	3.4	-0.6	4.1	3.8	4.5	5.5	6.6	6.9	8.2	+1.3
5.5-6.0 (High)	1.4	2.4	2.0	2.5	3.2	3.5	3.5	0.0	4.6	4.2	4.6	6.2	6.5	7.2	6.8	-0.4
Race (2-year average):[b]																
White	—	2.2	2.6	2.8	3.6	4.5	4.5	0.0	—	4.9	5.1	5.6	7.1	8.6	8.9	+0.3
Black	—	0.7	0.7	0.6	0.6	0.7	0.7	0.0	—	0.2	0.6	1.1	1.2	0.9	1.0	+0.1
Hispanic	—	3.8	4.1	4.0	4.0	4.1	4.2	+0.1	—	3.6	4.5	5.7	6.3	6.6	7.3	+0.7

NOTES: Level of significance of difference between the two most recent classes: s = .05, ss = .01, sss = .001.
'—' indicates data not available.
See Table D-39 for the number of subgroup cases.
See Appendix B for definition of variables in table.

SOURCE: The Monitoring the Future Study, the University of Michigan.

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[a] Parental education is an average score of mother's education and father's education. See Appendix B for details.

[b] To derive percentages for each racial subgroup, data for the specified year *and* the previous year have been combined to increase subgroup sample sizes and thus provide more stable estimates.

TABLE D-6
Hallucinogens:[a] Trends in Annual Prevalence of Use by Subgroups for Twelfth Graders

	Percent who used in last twelve months																							
	Class of 1975	Class of 1976	Class of 1977	Class of 1978	Class of 1979	Class of 1980	Class of 1981	Class of 1982	Class of 1983	Class of 1984	Class of 1985	Class of 1986	Class of 1987	Class of 1988	Class of 1989	Class of 1990	Class of 1991	Class of 1992	Class of 1993	Class of 1994	Class of 1995	Class of 1996	Class of 1997	'96-'97 change
Approx. N =	9400	15400	17100	17800	15500	15900	17500	17700	16300	15900	16000	15200	16300	16300	16700	15200	15000	15800	16300	15400	15400	14300	15400	
Total	11.2	9.4	8.8	9.6	9.9	9.3	9.0	8.1	7.3	6.5	6.3	6.0	6.4	5.5	5.6	5.9	5.8	5.9	7.4	7.6	9.3	10.1	9.8	-0.3
Adjusted[b]	—	—	—	—	11.8	10.4	10.1	9.0	8.3	7.3	7.6	7.6	6.7	5.8	6.2	6.0	6.1	6.2	7.8	7.8	9.7	10.7	10.0	-0.7
Sex:																								
Male	13.7	11.6	10.8	11.6	11.8	11.7	10.9	9.6	8.6	7.9	8.1	7.2	7.5	7.2	7.4	7.7	7.5	7.1	8.9	9.2	11.9	12.4	12.0	-0.4
Female	9.0	6.9	6.5	7.3	7.6	6.7	6.8	6.1	5.5	4.7	4.4	4.7	5.2	3.7	3.6	3.8	3.9	4.7	5.6	5.8	6.3	7.3	7.4	+0.1
College Plans:																								
None or under 4 yrs.	—	11.2	10.6	11.0	11.3	11.2	10.7	9.5	8.9	8.3	7.7	7.4	7.9	6.4	7.1	6.6	7.0	7.8	8.1	8.4	11.9	12.1	11.3	-0.8
Complete 4 yrs.	—	6.9	6.4	7.3	7.5	7.1	7.4	6.2	5.4	4.7	5.0	4.7	5.4	4.7	4.8	5.3	5.3	5.1	6.9	7.0	8.2	9.0	9.0	0.0
Region:																								
Northeast	13.2	10.9	10.6	13.0	12.9	12.2	12.9	11.4	8.7	11.3	9.9	7.9	7.5	5.8	5.6	6.6	7.0	7.1	9.0	9.0	10.1	13.3	13.9	+0.6
North Central	13.0	10.3	9.7	10.7	11.1	11.3	10.3	9.1	8.9	6.0	6.8	6.6	6.9	5.3	6.6	5.7	6.5	5.9	6.8	8.1	9.2	8.8	7.6	-1.2
South	8.5	7.4	6.8	6.3	5.7	5.4	4.1	4.6	5.2	3.9	3.2	3.3	4.8	5.2	4.9	5.0	3.7	4.7	5.9	6.7	8.8	8.9	9.2	+0.3
West	10.2	9.3	8.2	9.6	11.0	9.2	10.4	7.8	6.3	7.0	6.3	7.2	7.4	6.0	5.5	6.9	7.3	7.3	9.2	7.1	9.6	10.5	9.5	-1.0
Population Density:																								
Large MSA	13.9	11.1	9.9	11.9	12.3	11.6	12.0	10.9	9.2	8.8	8.3	7.6	7.9	6.5	5.4	5.7	5.1	6.2	7.3	8.1	11.0	10.5	8.8	-1.7
Other MSA	12.1	9.8	9.1	9.3	10.5	9.8	9.0	7.6	7.6	6.3	6.1	5.9	6.3	6.0	5.9	6.6	7.7	6.0	8.1	8.6	9.5	11.4	11.2	-0.2
Non-MSA	8.5	7.7	7.5	8.3	7.1	7.1	6.8	6.5	5.3	5.0	5.0	4.9	5.3	3.5	5.0	4.5	3.3	5.5	6.3	5.1	7.0	7.4	8.3	+0.9
Parental Education:[c]																								
1.0-2.0 (Low)	8.9	7.4	6.8	7.7	7.1	8.0	6.7	6.5	6.5	5.4	4.8	5.4	5.8	4.9	4.2	3.8	4.9	3.6	4.9	5.0	7.2	7.4	7.3	-0.1
2.5-3.0	10.2	10.0	9.1	9.6	9.6	9.5	8.9	8.0	6.8	6.7	6.4	6.0	6.2	4.2	4.9	4.6	4.9	5.6	5.9	7.0	8.7	8.8	8.5	-0.3
3.5-4.0	10.9	9.8	9.2	9.7	9.7	9.2	9.2	8.6	7.7	6.3	7.2	6.3	6.0	4.8	5.6	6.5	6.2	6.0	7.5	8.0	9.5	10.3	9.9	-0.4
4.5-5.0	11.1	10.1	8.8	10.2	10.9	9.1	9.4	7.8	7.0	5.9	6.2	5.5	6.8	6.7	6.6	6.8	6.1	6.2	8.9	7.7	9.6	10.5	10.4	-0.1
5.5-6.0 (High)	8.9	9.4	9.5	10.2	11.7	9.9	10.6	9.0	7.0	7.6	4.3	5.9	7.2	7.2	7.0	8.2	7.3	7.4	8.9	9.0	9.5	11.4	11.6	+0.2
Race (2-year average):[d]																								
White	—	—	9.8	9.9	10.5	10.3	10.0	9.3	8.3	7.5	7.0	6.7	6.8	6.8	6.4	6.7	6.8	6.9	7.9	8.6	9.5	10.8	11.6	+0.8
Black	—	—	2.4	2.3	2.0	1.9	1.9	1.8	2.2	1.7	1.2	1.6	1.5	1.0	0.9	0.8	0.6	0.7	0.8	1.2	1.2	1.7	1.9	+0.2
Hispanic	—	—	7.9	7.2	7.0	7.1	7.0	7.7	6.6	5.2	5.7	5.7	5.0	4.0	3.2	3.3	4.4	4.6	5.3	5.8	7.1	8.3	7.3	-1.0

NOTES: Level of significance of difference between the two most recent classes: s = .05, ss = .01, sss = .001. '—' indicates data not available.
See Table D-40 for the number of subgroup cases.
See Appendix B for definition of variables in table.

SOURCE: The Monitoring the Future Study, the University of Michigan.

[a] All data are unadjusted for underreporting of PCP, unless otherwise indicated.

[b] Adjusted for underreporting of PCP. See text for details.

[c] Parental education is an average score of mother's education and father's education. See Appendix B for details.

[d] To derive percentages for each racial subgroup, data for the specified year *and* the previous year have been combined to increase subgroup sample sizes and thus provide more stable estimates.

TABLE D-7
LSD: Trends in Annual Prevalence of Use by Subgroups for Eighth and Tenth Graders

Percent who used in last twelve months

	8th Grade								10th Grade							
	1991	1992	1993	1994	1995	1996	1997	'96–'97 change	1991	1992	1993	1994	1995	1996	1997	'96–'97 change
Approx. N =	17500	18600	18300	17300	17500	17800	18600		14800	14800	15300	15800	17000	15600	15500	
Total	1.7	2.1	2.3	2.4	3.2	3.5	3.2	-0.3	3.7	4.0	4.2	5.2	6.5	6.9	6.7	-0.2
Sex:																
Male	2.0	2.1	2.5	2.6	3.4	3.7	3.5	-0.2	3.9	4.3	5.1	5.9	7.4	7.6	7.6	0.0
Female	1.3	2.0	2.1	2.1	2.9	3.2	2.8	-0.4	3.4	3.6	3.2	4.3	5.5	6.2	5.8	-0.4
College Plans:																
None or under 4 yrs.	4.5	6.4	6.4	6.2	8.5	8.2	9.3	+1.1	6.8	7.0	8.4	9.4	11.1	13.1	12.8	-0.3
Complete 4 yrs.	1.2	1.5	1.6	1.8	2.5	2.7	2.5	-0.2	3.0	3.4	3.3	4.2	5.6	5.8	5.7	-0.1
Region:																
Northeast	1.3	1.4	1.8	2.6	2.9	2.9	2.3	-0.6	3.6	2.6	3.8	5.1	4.7	6.4	5.2	-1.2
North Central	1.4	1.8	1.4	1.7	3.5	3.4	3.3	-0.1	3.2	4.1	4.4	5.2	7.3	8.3	6.0	-2.3s
South	1.8	2.4	2.4	2.1	2.8	3.4	3.0	-0.4	3.3	3.7	3.2	4.6	6.8	6.8	7.9	+1.1
West	2.2	2.9	3.7	3.3	3.8	4.3	4.3	0.0	4.8	5.9	6.1	6.3	6.5	5.7	7.4	+1.7
Population Density:																
Large MSA	1.9	2.0	2.0	2.7	3.6	3.2	2.9	-0.3	3.8	4.4	4.4	5.4	6.6	7.6	7.0	-0.6
Other MSA	1.7	2.5	2.8	2.8	3.3	4.1	3.6	-0.5	4.4	4.1	4.4	5.9	7.1	7.4	7.0	-0.4
Non-MSA	1.3	1.6	1.4	1.3	2.4	2.6	2.8	+0.2	2.3	3.5	3.7	3.7	5.0	5.2	6.0	+0.8
Parental Education:[a]																
1.0-2.0 (Low)	3.5	3.1	3.1	2.8	4.6	4.4	4.7	+0.3	3.1	4.4	5.5	5.5	6.9	7.6	5.9	-1.7
2.5-3.0	1.8	2.1	2.3	2.6	3.1	4.0	3.2	-0.8	4.0	4.2	4.2	5.1	6.9	7.6	6.6	-1.0
3.5-4.0	1.4	2.0	2.4	2.4	3.6	3.5	3.4	-0.1	3.4	4.1	4.2	5.3	6.9	7.9	7.4	-0.5
4.5-5.0	1.4	1.5	2.1	2.1	2.6	3.4	2.9	-0.5	3.8	3.6	3.9	4.8	6.0	6.0	7.0	+1.0
5.5-6.0 (High)	1.3	2.0	2.0	2.1	2.9	3.0	2.9	-0.1	4.2	3.9	3.9	5.4	5.9	5.8	6.0	+0.2
Race (2-year average):[b]																
White	—	1.9	2.3	2.5	3.1	3.9	3.9	0.0	—	4.6	4.6	5.0	6.4	7.7	7.9	+0.2
Black	—	0.5	0.4	0.5	0.5	0.6	0.6	0.0	—	0.2	0.5	0.9	1.0	0.8	0.9	+0.1
Hispanic	—	3.3	3.7	3.6	3.3	3.5	3.9	+0.4	—	3.2	4.1	5.0	5.7	6.1	6.7	+0.6

NOTES: Level of significance of difference between the two most recent classes: s = .05, ss = .01, sss = .001.
'—' indicates data not available.
See Table D-39 for the number of subgroup cases.
See Appendix B for definition of variables in table.

SOURCE: The Monitoring the Future Study, the University of Michigan.

[a] Parental education is an average score of mother's education and father's education. See Appendix B for details.

[b] To derive percentages for each racial subgroup, data for the specified year *and* the previous year have been combined to increase subgroup sample sizes and thus provide more stable estimates.

TABLE D-8
LSD: Trends in Annual Prevalence of Use by Subgroups for Twelfth Graders

	Percent who used in last twelve months																							
	Class of 1975	Class of 1976	Class of 1977	Class of 1978	Class of 1979	Class of 1980	Class of 1981	Class of 1982	Class of 1983	Class of 1984	Class of 1985	Class of 1986	Class of 1987	Class of 1988	Class of 1989	Class of 1990	Class of 1991	Class of 1992	Class of 1993	Class of 1994	Class of 1995	Class of 1996	Class of 1997	'96-'97 change
Approx. N =	9400	15400	17100	17800	15500	15900	17500	17700	16300	15900	16000	15200	16300	16300	16700	15200	15000	15800	16300	15400	15400	14300	15400	
Total	7.2	6.4	5.5	6.3	6.6	6.5	6.5	6.1	5.4	4.7	4.4	4.5	5.2	4.8	4.9	5.4	5.2	5.6	6.8	6.9	8.4	8.8	8.4	-0.4
Sex:																								
Male	9.6	7.9	7.1	7.8	8.0	8.1	8.0	7.4	6.7	5.8	5.9	5.5	6.4	6.5	6.5	7.1	6.8	6.7	8.4	8.4	10.7	10.9	10.3	-0.6
Female	5.6	4.6	3.9	4.5	4.8	4.8	4.7	4.3	3.8	3.1	2.8	3.4	3.9	3.0	3.2	3.6	3.4	4.4	5.1	5.3	5.8	6.5	6.2	-0.3
College Plans:																								
None or under 4 yrs.	—	7.5	6.7	7.2	8.0	8.2	8.0	7.5	6.9	6.1	5.6	5.9	6.6	5.7	6.5	6.2	6.4	7.6	7.5	7.7	11.2	11.4	10.3	-1.1
Complete 4 yrs.	—	4.7	4.0	4.6	4.5	4.7	5.0	4.3	3.8	3.1	3.4	3.3	4.3	4.1	4.2	4.8	4.7	4.8	6.4	6.3	7.3	7.7	7.4	-0.3
Region:																								
Northeast	8.5	8.0	7.2	8.0	7.9	6.8	9.0	8.0	5.6	7.0	5.4	5.1	5.3	4.7	5.1	5.9	6.1	6.6	8.6	8.2	8.8	11.9	11.8	-0.1
North Central	8.7	7.0	6.5	7.9	7.9	8.5	7.8	7.3	7.0	4.4	5.3	5.3	5.7	4.7	6.0	5.3	5.9	5.5	6.3	7.3	8.3	7.7	7.0	-0.7
South	5.4	4.7	3.7	3.7	3.4	4.3	3.4	3.9	4.4	3.5	2.8	2.6	4.2	4.7	4.2	4.7	3.4	4.4	5.5	6.3	8.1	7.9	8.1	+0.2
West	7.6	5.9	5.0	5.8	8.3	6.5	6.3	4.8	4.2	4.5	4.6	5.9	6.2	5.2	4.4	6.4	6.5	7.0	8.5	6.2	8.5	8.8	6.9	-1.9
Population Density:																								
Large MSA	9.4	7.9	6.4	7.2	7.6	7.3	8.0	7.3	5.7	4.7	4.1	4.4	5.6	5.2	4.6	5.2	4.3	5.7	6.7	7.3	9.7	9.0	7.7	-1.3
Other MSA	7.4	6.8	5.6	6.1	7.3	6.8	6.9	6.3	6.0	4.9	4.8	4.9	5.4	5.6	5.3	6.1	7.0	5.8	7.6	7.9	8.7	10.0	9.3	-0.7
Non-MSA	5.7	4.8	4.8	5.8	4.9	5.6	4.9	4.8	4.4	4.2	4.1	4.0	4.4	3.1	4.3	4.2	3.0	5.1	5.6	4.6	6.5	6.5	7.3	+0.8
Parental Education:[a]																								
1.0-2.0 (Low)	6.1	4.8	4.5	5.0	4.5	5.2	4.8	5.0	4.9	4.1	3.0	3.9	4.4	4.1	3.6	3.4	4.3	3.3	4.6	4.4	6.6	6.7	6.8	+0.1
2.5-3.0	6.5	6.8	5.8	6.1	6.3	6.8	6.5	6.1	5.1	4.8	4.5	4.6	4.9	3.8	4.3	4.4	4.4	5.2	5.6	6.5	8.1	8.2	7.3	-0.9
3.5-4.0	6.4	6.7	5.6	6.1	6.7	6.7	6.7	6.4	5.7	4.3	4.7	4.6	4.9	4.2	5.1	6.0	5.5	5.7	7.0	7.4	8.6	9.3	8.5	-0.8
4.5-5.0	7.0	6.4	5.3	6.7	7.5	5.7	6.4	5.7	5.2	4.3	4.8	4.1	5.8	6.2	5.9	6.2	5.3	5.8	8.3	6.9	8.6	8.7	8.6	-0.1
5.5-6.0 (High)	6.5	6.4	6.1	7.0	7.4	7.2	7.7	6.0	4.8	5.0	3.8	4.7	6.1	6.2	5.5	7.4	7.1	7.0	8.2	7.9	8.3	9.2	9.5	+0.3
Race (2-year average):[b]																								
White	—	—	6.3	6.3	6.8	7.0	7.2	6.9	6.2	5.5	5.0	4.9	5.4	5.8	5.7	6.1	6.3	6.4	7.4	8.0	8.6	9.7	10.1	+0.4
Black	—	—	1.3	1.3	1.2	1.1	1.0	0.9	0.9	0.7	0.7	1.0	0.8	0.6	0.7	0.6	0.6	0.6	0.6	0.9	1.0	1.3	1.6	+0.3
Hispanic	—	—	6.1	5.0	4.9	5.2	4.5	5.2	5.0	4.1	3.9	3.9	4.0	3.1	2.3	2.7	3.6	4.1	5.1	5.4	6.4	7.4	6.3	-1.1

NOTES: Level of significance of difference between the two most recent classes: s = .05, ss = .01, sss = .001. '—' indicates data not available.
See Table D-40 for the number of subgroup cases.
See Appendix B for definition of variables in table.

SOURCE: The Monitoring the Future Study, the University of Michigan.

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[a] Parental education is an average score of mother's education and father's education. See Appendix B for details.

[b] To derive percentages for each racial subgroup, data for the specified year *and* the previous year have been combined to increase subgroup sample sizes and thus provide more stable estimates.

TABLE D-9
Cocaine: Trends in Annual Prevalence of Use by Subgroups for Eighth and Tenth Graders

Percent who used in last twelve months

	8th Grade								10th Grade							
	1991	1992	1993	1994	1995	1996	1997	'96-'97 change	1991	1992	1993	1994	1995	1996	1997	'96-'97 change
Approx. N =	17500	18600	18300	17300	17500	17800	18600		14800	14800	15300	15800	17000	15600	15500	
Total	1.1	1.5	1.7	2.1	2.6	3.0	2.8	-0.2	2.2	1.9	2.1	2.8	3.5	4.2	4.7	+0.5
Sex:																
Male	1.4	1.5	1.9	2.1	2.5	2.7	3.1	+0.4	2.2	2.0	2.5	3.1	3.5	4.5	4.7	+0.2
Female	0.9	1.5	1.5	2.1	2.6	3.1	2.5	-0.6	2.2	1.7	1.6	2.5	3.3	4.0	4.6	+0.6
College Plans:																
None or under 4 yrs.	3.2	4.8	5.4	6.6	7.0	7.9	7.5	-0.4	4.7	4.0	5.1	6.6	7.2	10.0	10.4	+0.4
Complete 4 yrs.	0.8	1.0	1.1	1.5	2.0	2.2	2.2	0.0	1.7	1.4	1.4	2.0	2.8	3.2	3.7	+0.5
Region:																
Northeast	1.3	0.8	1.0	2.2	2.2	2.6	2.4	-0.2	1.5	1.0	2.0	2.4	2.5	3.0	3.0	0.0
North Central	0.9	1.4	1.0	1.2	2.6	2.9	2.6	-0.3	1.7	1.7	1.4	2.2	2.9	4.1	4.0	-0.1
South	1.1	1.7	2.1	2.5	2.4	2.7	2.6	-0.1	2.0	1.8	1.9	2.6	3.5	4.2	5.4	+1.2
West	1.5	2.0	2.7	2.3	3.3	3.7	3.7	0.0	3.6	3.2	3.7	4.7	5.3	5.9	6.4	+0.5
Population Density																
Large MSA	1.1	1.4	1.3	1.9	2.4	2.8	2.4	-0.4	1.9	1.6	1.6	2.3	3.4	3.8	4.5	+0.7
Other MSA	1.1	1.7	2.2	2.5	2.8	3.2	2.9	-0.3	2.7	2.1	2.3	3.1	3.5	4.7	4.3	-0.4
Non-MSA	1.2	1.3	1.2	1.4	2.4	2.7	3.0	+0.3	1.6	1.7	2.1	2.7	3.6	3.7	5.7	+2.0s
Parental Education:[a]																
1.0-2.0 (Low)	2.4	3.2	2.9	3.5	4.9	3.9	4.7	+0.8	3.3	3.5	3.2	3.8	5.3	7.4	6.3	-1.1
2.5-3.0	1.4	1.6	2.0	2.3	2.4	3.3	3.0	-0.3	2.4	1.7	2.2	2.9	4.3	4.5	5.0	+0.5
3.5-4.0	0.7	1.2	1.8	2.1	2.8	3.3	2.8	-0.5	2.4	2.1	2.5	3.2	3.7	4.3	5.4	+1.1
4.5-5.0	0.7	1.0	1.0	1.6	1.9	2.7	2.6	-0.1	1.6	1.4	1.6	2.1	2.6	3.4	3.7	+0.3
5.5-6.0 (High)	1.2	1.5	1.1	1.9	2.5	2.5	2.3	-0.2	1.9	1.5	1.1	1.9	1.9	3.4	3.3	-0.1
Race (2-year average)[b]																
White	—	1.2	1.3	1.6	2.3	2.8	3.0	+0.2	—	2.1	2.0	2.2	3.0	3.8	4.4	+0.6
Black	—	0.7	0.7	0.7	0.6	0.6	0.5	-0.1	—	0.6	0.6	1.0	0.9	0.7	0.8	+0.1
Hispanic	—	3.1	4.0	4.5	4.7	4.8	4.3	-0.5	—	3.7	3.7	4.9	5.5	7.0	8.5	+1.5

NOTES: Level of significance of difference between the two most recent classes: s = .05, ss = .01, sss = .001.
'—' indicates data not available.
See Table D-39 for the number of subgroup cases.
See Appendix B for definition of variables in table.

SOURCE: The Monitoring the Future Study, the University of Michigan.

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[a] Parental education is an average score of mother's education and father's education. See Appendix B for details.

[b] To derive percentages for each racial subgroup, data for the specified year *and* the previous year have been combined to increase subgroup sample sizes and thus provide more stable estimates.

TABLE D-10
Cocaine: Trends in Annual Prevalence of Use by Subgroups for Twelfth Graders

	Percent who used in last twelve months																							
	Class of 1975	Class of 1976	Class of 1977	Class of 1978	Class of 1979	Class of 1980	Class of 1981	Class of 1982	Class of 1983	Class of 1984	Class of 1985	Class of 1986	Class of 1987	Class of 1988	Class of 1989	Class of 1990	Class of 1991	Class of 1992	Class of 1993	Class of 1994	Class of 1995	Class of 1996	Class of 1997	'96–'97 change
Approx. N =	9400	15400	17100	17800	15500	15900	17500	17700	16300	15900	16000	15200	16300	16300	16700	15200	15000	15800	16300	15400	15400	14300	15400	
Total	5.6	6.0	7.2	9.0	12.0	12.3	12.4	11.5	11.4	11.6	13.1	12.7	10.3	7.9	6.5	5.3	3.5	3.1	3.3	3.6	4.0	4.9	5.5	+0.6
Sex:																								
Male	7.5	7.5	9.3	11.4	14.6	14.8	13.8	13.1	13.2	13.8	14.8	14.3	11.3	9.1	8.1	6.6	4.1	3.7	4.0	4.5	4.8	6.0	6.6	+0.6
Female	3.9	4.4	4.9	6.5	9.3	9.8	10.4	9.6	9.3	9.1	11.2	10.9	9.2	6.5	4.9	3.8	2.6	2.4	2.3	2.8	3.1	3.5	4.2	+0.7
College Plans:																								
None or under 4 yrs	—	6.6	8.1	9.5	13.7	13.2	12.4	12.5	12.2	13.2	14.7	15.7	12.4	9.7	9.3	7.8	4.9	5.1	4.5	5.3	5.6	7.5	8.1	+0.6
Complete 4 yrs	—	5.0	5.5	7.7	9.5	10.8	11.5	9.9	9.9	9.7	11.4	10.4	9.0	6.7	5.3	4.1	2.8	2.4	2.8	3.0	3.4	4.0	4.4	+0.4
Region:																								
Northeast	5.3	6.6	7.9	11.8	13.8	14.2	16.8	16.9	15.2	19.5	20.8	17.9	13.3	9.1	7.3	6.5	3.8	2.8	3.1	3.1	3.8	5.5	6.6	+1.1
North Central	5.1	5.5	6.3	8.5	10.5	10.9	9.4	9.0	8.0	5.8	8.2	10.1	7.5	6.1	5.3	4.1	3.2	2.5	2.4	3.7	3.4	3.8	4.7	+0.9
South	5.4	5.1	6.0	6.8	8.5	7.8	6.8	6.3	7.7	7.7	7.5	7.1	7.0	6.2	6.0	4.8	3.0	3.2	3.1	3.4	3.6	4.6	4.8	+0.2
West	7.8	7.9	10.2	10.7	18.6	20.6	22.1	17.9	19.2	19.3	19.7	20.0	16.4	12.1	8.5	6.6	4.4	4.3	4.9	4.5	5.8	6.1	6.8	+0.7
Population Density:																								
Large MSA	7.3	8.6	8.6	12.3	16.6	18.7	17.5	17.2	16.9	16.8	18.8	18.8	12.9	9.3	6.4	5.6	4.1	3.6	2.7	3.3	4.4	4.8	4.7	-0.1
Other MSA	5.9	5.8	7.3	8.9	11.7	11.3	11.5	10.1	11.2	11.0	12.4	12.0	10.1	8.5	7.1	5.4	3.7	3.3	3.9	4.1	3.9	4.9	5.6	+0.7
Non-MSA	4.3	4.3	5.8	6.4	8.9	8.9	9.4	8.5	7.3	8.3	9.2	9.0	8.1	5.3	5.4	4.8	2.5	2.4	2.7	3.2	3.9	4.9	6.0	+1.1
Parental Education[a]																								
1.0-2.0 (Low)	4.5	5.3	5.5	6.3	8.4	9.0	8.3	7.6	9.0	9.4	12.0	10.5	8.7	7.6	6.7	4.7	3.5	3.9	3.5	4.1	4.8	5.3	6.5	+1.2
2.5-3.0	4.6	6.1	6.8	8.7	11.1	11.2	10.5	11.0	9.8	10.9	12.7	12.9	9.9	7.4	6.4	5.6	3.8	3.3	3.0	4.0	3.9	5.0	5.5	+0.5
3.5-4.0	4.5	5.9	7.2	9.0	13.2	13.3	13.3	12.5	11.7	12.2	14.0	13.6	11.2	7.2	6.4	5.6	3.7	3.0	3.8	3.8	4.2	5.0	5.6	+0.6
4.5-5.0	6.3	7.6	8.1	10.4	14.0	13.6	14.9	13.6	13.1	12.2	13.7	12.2	10.0	8.7	7.1	4.4	3.1	2.9	3.0	3.1	3.7	4.8	5.2	+0.4
5.5-6.0 (High)	5.2	7.1	9.5	11.6	15.2	16.3	16.2	13.8	15.1	13.4	11.9	12.5	10.8	8.1	5.8	5.5	2.4	2.6	2.4	3.3	3.4	4.3	4.4	+0.1
Race (2-year average):[b]																								
White	—	—	6.5	8.3	10.9	12.8	13.0	12.6	11.8	11.9	13.0	13.5	12.0	9.6	7.6	6.3	4.6	3.3	3.1	3.5	4.0	4.5	5.5	+1.0
Black	—	—	4.8	4.6	4.6	5.2	4.8	5.2	7.2	6.3	5.3	5.8	4.8	3.8	2.9	1.7	1.5	1.2	0.8	0.9	1.0	0.8	0.9	+0.1
Hispanic	—	—	7.2	7.5	8.9	11.2	12.4	12.1	11.4	13.3	16.3	16.7	14.0	9.9	7.8	7.4	6.1	5.2	5.8	5.4	5.5	7.3	7.6	+0.3

NOTES: Level of significance of difference between the two most recent classes: s = .05, ss = .01, sss = .001. '—' indicates data not available.
See Table D-40 for the number of subgroup cases.
See Appendix B for definition of variables in table.

SOURCE: The Monitoring the Future Study, the University of Michigan.

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[a] Parental education is an average score of mother's education and father's education. See Appendix B for details.

[b] To derive percentages for each racial subgroup, data for the specified year *and* the previous year have been combined to increase subgroup sample sizes and thus provide more stable estimates.

TABLE D-11
Crack: Trends in Annual Prevalence of Use by Subgroups for Eighth and Tenth Graders

Percent who used in last twelve months

	8th Grade								10th Grade							
	1991	1992	1993	1994	1995	1996	1997	'96–'97 change	1991	1992	1993	1994	1995	1996	1997	'96–'97 change
Approx. N =	17500	18600	18300	17300	17500	17800	18600		14800	14800	15300	15800	17000	15600	15500	
Total	0.7	0.9	1.0	1.3	1.6	1.8	1.7	-0.1	0.9	0.9	1.1	1.4	1.8	2.1	2.2	+0.1
Sex:																
Male	0.8	0.9	1.1	1.3	1.5	1.7	1.8	+0.1	0.9	0.9	1.3	1.6	1.9	2.1	2.3	+0.2
Female	0.5	0.9	0.9	1.2	1.6	1.9	1.5	-0.4	0.8	0.9	0.7	1.0	1.6	2.1	2.2	+0.1
College Plans:																
None or under 4 yrs.	2.0	2.9	3.4	4.6	4.2	4.9	4.7	-0.2	2.4	2.1	2.7	3.4	3.7	5.0	4.9	-0.1
Complete 4 yrs.	0.4	0.6	0.6	0.8	1.3	1.3	1.3	0.0	0.6	0.6	0.7	0.9	1.5	1.5	1.8	+0.3
Region:																
Northeast	0.5	0.4	0.4	1.4	1.4	1.7	1.6	-0.1	0.5	0.4	1.1	1.4	1.1	1.4	1.5	+0.1
North Central	0.6	1.0	0.8	0.9	1.4	1.9	1.6	-0.3	0.9	0.9	0.8	1.0	1.5	2.2	2.1	-0.1
South	0.7	1.0	1.2	1.6	1.4	1.7	1.4	-0.3	1.0	0.8	0.9	1.3	1.9	2.0	2.0	0.0
West	0.8	1.3	1.4	1.3	2.3	2.1	2.3	+0.2	1.1	1.4	1.7	1.9	2.8	2.8	3.8	+1.0
Population Density:																
Large MSA	0.5	0.8	0.7	1.3	1.5	1.8	1.5	-0.3	0.9	0.8	0.7	0.9	1.9	1.7	2.3	+0.6
Other MSA	0.7	1.1	1.2	1.5	1.7	2.0	1.8	-0.2	0.9	0.9	1.1	1.5	1.6	2.4	1.7	-0.7ss
Non-MSA	0.8	0.8	0.9	1.0	1.4	1.7	1.7	0.0	0.9	0.9	1.2	1.6	2.3	1.9	3.3	+1.4sss
Parental Education:[a]																
1.0-2.0 (Low)	1.7	2.2	1.8	2.8	3.0	2.7	3.0	+0.3	1.3	1.7	1.8	1.9	3.0	3.9	3.4	-0.5
2.5-3.0	0.7	0.8	1.0	1.4	1.2	2.1	2.0	-0.1	1.0	0.8	1.0	1.1	2.4	2.5	2.4	-0.1
3.5-4.0	0.4	0.7	1.2	0.9	1.7	2.0	1.4	-0.6	0.9	1.0	1.4	1.5	1.7	1.9	2.6	+0.7
4.5-5.0	0.4	0.6	0.5	1.1	1.3	1.5	1.5	0.0	0.7	0.6	0.7	1.0	1.3	1.4	1.8	+0.4
5.5-6.0 (High)	0.8	1.0	0.6	1.4	1.6	1.5	1.5	0.0	0.7	0.9	0.5	1.1	1.1	1.8	1.2	-0.6
Race (2-year average):[b]																
White	—	0.7	0.8	1.0	1.4	1.7	1.7	0.0	—	0.9	0.9	1.1	1.5	1.9	2.2	+0.3
Black	—	0.4	0.4	0.5	0.5	0.4	0.4	0.0	—	0.3	0.4	0.8	0.6	0.4	0.4	0.0
Hispanic	—	1.9	2.0	2.1	2.7	3.0	2.8	-0.2	—	1.5	1.7	1.9	2.5	3.7	3.7	0.0

NOTES: Level of significance of difference between the two most recent classes: s = .05, ss = .01, sss = .001.
'—' indicates data not available.
See Table D-39 for the number of subgroup cases.
See Appendix B for definition of variables in table.

SOURCE: The Monitoring the Future Study, the University of Michigan.

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[a] Parental education is an average score of mother's education and father's education. See Appendix B for details.

[b] To derive percentages for each racial subgroup, data for the specified year *and* the previous year have been combined to increase subgroup sample sizes and thus provide more stable estimates.

TABLE D-12
Crack: Trends in Annual Prevalence of Use by Subgroups for Twelfth Graders

Percent who used in last twelve months

	Class of 1975	Class of 1976	Class of 1977	Class of 1978	Class of 1979	Class of 1980	Class of 1981	Class of 1982	Class of 1983	Class of 1984	Class of 1985	Class of 1986	Class of 1987	Class of 1988	Class of 1989	Class of 1990	Class of 1991	Class of 1992	Class of 1993	Class of 1994	Class of 1995	Class of 1996	Class of 1997	'96-'97 change
Approx. N =	9400	15400	17100	17800	15500	15900	17500	17700	16300	15900	16000	15200	16300	16300	16700	15200	15000	15800	16300	15400	15400	14300	15400	
Total	—	—	—	—	—	—	—	—	—	—	—	4.1	3.9	3.1	3.1	1.9	1.5	1.5	1.5	1.9	2.1	2.1	2.4	+0.3
Sex:																								
Male	—	—	—	—	—	—	—	—	—	—	—	4.2	4.6	4.0	4.3	2.3	1.8	1.7	1.9	2.4	2.5	2.6	3.0	+0.4
Female	—	—	—	—	—	—	—	—	—	—	—	3.6	3.0	2.0	1.8	1.4	1.0	1.0	1.1	1.3	1.5	1.6	1.8	+0.2
College Plans:																								
None or under 4 yrs	—	—	—	—	—	—	—	—	—	—	—	5.2	5.1	4.1	3.8	3.5	2.3	2.6	2.7	3.3	3.0	4.0	4.3	+0.3
Complete 4 yrs	—	—	—	—	—	—	—	—	—	—	—	2.8	2.7	2.3	2.7	1.2	1.1	1.0	1.2	1.4	1.7	1.6	1.7	+0.1
Region:																								
Northeast	—	—	—	—	—	—	—	—	—	—	—	6.0	4.0	2.3	3.3	2.0	1.3	1.3	1.2	1.5	1.6	2.1	2.6	+0.5
North Central	—	—	—	—	—	—	—	—	—	—	—	3.1	3.5	2.4	2.2	1.6	1.5	1.4	1.3	2.2	2.0	2.3	2.2	-0.1
South	—	—	—	—	—	—	—	—	—	—	—	1.6	2.8	2.6	3.3	1.8	1.2	1.2	1.5	1.6	1.7	1.7	1.8	+0.1
West	—	—	—	—	—	—	—	—	—	—	—	7.5	6.1	5.6	3.8	2.7	1.8	2.1	2.1	2.3	3.5	2.6	3.4	+0.8
Population Density:																								
Large MSA	—	—	—	—	—	—	—	—	—	—	—	5.9	4.7	3.9	3.4	1.6	1.2	1.3	1.3	1.5	2.0	2.1	2.2	+0.1
Other MSA	—	—	—	—	—	—	—	—	—	—	—	3.5	3.5	3.2	3.3	2.0	1.7	1.6	1.8	2.1	2.1	1.9	2.3	+0.4
Non-MSA	—	—	—	—	—	—	—	—	—	—	—	3.5	3.7	2.0	2.2	2.0	1.2	1.3	1.4	1.9	2.1	2.5	2.8	+0.3
Parental Education:[a]																								
1.0-2.0 (Low)	—	—	—	—	—	—	—	—	—	—	—	1.2	3.6	3.3	3.1	2.2	1.6	1.9	2.6	2.7	3.4	3.4	3.6	+0.2
2.5-3.0	—	—	—	—	—	—	—	—	—	—	—	5.3	4.2	2.6	3.1	2.2	1.5	1.9	1.6	2.2	2.3	2.4	2.5	+0.1
3.5-4.0	—	—	—	—	—	—	—	—	—	—	—	4.0	4.0	3.4	2.8	1.8	1.7	1.3	1.5	1.8	1.7	2.2	2.0	-0.2
4.5-5.0	—	—	—	—	—	—	—	—	—	—	—	2.9	3.4	3.1	2.6	1.1	0.9	1.0	1.4	1.1	1.9	1.6	2.5	+0.9s
5.5-6.0 (High)	—	—	—	—	—	—	—	—	—	—	—	3.7	2.4	2.1	3.7	1.8	1.1	0.8	1.0	1.8	1.5	1.6	1.8	+0.2
Race (2-year average)[b]																								
White	—	—	—	—	—	—	—	—	—	—	—	—	3.8	3.4	3.1	2.1	1.6	1.3	1.3	1.6	1.9	2.0	2.2	+0.2
Black	—	—	—	—	—	—	—	—	—	—	—	—	1.9	2.5	2.0	1.3	1.0	0.6	0.6	0.9	1.0	0.7	0.5	-0.2
Hispanic	—	—	—	—	—	—	—	—	—	—	—	—	5.5	3.7	3.2	4.2	3.4	2.7	2.5	2.4	3.1	4.1	4.2	+0.1

NOTES: Level of significance of difference between the two most recent classes: s = .05, ss = .01, sss = .001. '—' indicates data not available.
See Table D-40 for the number of subgroup cases.
See Appendix B for definition of variables in table.
Data based on one of five forms in 1986; N is one-fifth of N indicated. Data based on two forms in 1987-89; N is two-fifths of N indicated in 1987-88 and two-sixths of N indicated in 1989. Data based on six questionnaire forms in 1990-97.

SOURCE: The Monitoring the Future Study, the University of Michigan.

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[a] Parental education is an average score of mother's education and father's education. See Appendix B for details.

[b] To derive percentages for each racial subgroup, data for the specified year *and* the previous year have been combined to increase subgroup sample sizes and thus provide more stable estimates.

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TABLE D-13
Other Cocaine: Trends in Annual Prevalence of Use by Subgroups for Eighth and Tenth Graders

Percent who used in last twelve months

	8th Grade								10th Grade							
	1991	1992	1993	1994	1995	1996	1997	'96–'97 change	1991	1992	1993	1994	1995	1996	1997	'96–'97 change
Approx. N =	17500	18600	18300	17300	17500	17800	18600		14800	14800	15300	15800	17000	15600	15500	
Total	1.0	1.2	1.3	1.7	2.1	2.5	2.2	-0.3	2.1	1.7	1.8	2.4	3.0	3.5	4.1	+0.6
Sex:																
Male	1.1	1.2	1.5	1.7	2.0	2.2	2.5	+0.3	2.0	1.9	2.2	2.7	3.1	3.7	4.1	+0.4
Female	0.8	1.2	1.2	1.8	2.2	2.6	1.9	-0.7	2.1	1.5	1.4	2.1	2.9	3.3	4.0	+0.7
College Plans:																
None or under 4 yrs.	2.7	4.2	4.1	5.6	5.9	6.6	6.0	-0.6	4.4	3.3	4.5	5.9	6.3	8.4	9.0	+0.6
Complete 4 yrs.	0.6	0.7	0.9	1.2	1.6	1.8	1.7	-0.1	1.6	1.3	1.3	1.7	2.5	2.7	3.2	+0.5
Region:																
Northeast	1.2	0.7	0.9	1.9	1.8	2.1	1.6	-0.5	1.3	1.0	1.8	2.0	2.2	2.2	2.5	+0.3
North Central	0.6	1.0	0.7	0.9	2.0	2.4	2.0	-0.4	1.6	1.3	1.3	1.8	2.5	3.4	3.4	0.0
South	1.0	1.5	1.6	2.0	2.0	2.3	2.1	-0.2	1.9	1.6	1.7	2.2	2.9	3.5	4.8	+1.3
West	1.3	1.5	2.1	2.0	2.7	3.1	2.9	-0.2	3.4	3.1	3.2	4.3	4.8	5.2	5.3	+0.1
Population Density:																
Large MSA	0.9	1.1	1.0	1.6	2.0	2.5	1.7	-0.8	1.6	1.5	1.4	1.9	2.8	3.3	3.9	+0.6
Other MSA	0.9	1.4	1.8	2.1	2.1	2.6	2.2	-0.4	2.6	2.0	2.0	2.7	3.1	3.9	3.8	-0.1
Non-MSA	1.1	0.9	0.7	1.2	2.2	2.2	2.5	+0.3	1.4	1.4	1.9	2.5	3.1	3.2	4.9	+1.7s
Parental Education:[a]																
1.0-2.0 (Low)	2.1	2.7	2.2	3.1	4.3	3.2	3.5	+0.3	3.1	2.7	2.7	3.1	5.0	6.1	5.5	-0.6
2.5-3.0	1.2	1.1	1.5	2.0	2.0	2.6	2.4	-0.2	2.2	1.6	2.0	2.6	3.6	3.6	4.3	+0.7
3.5-4.0	0.6	1.0	1.5	1.9	2.2	2.8	2.1	-0.7	2.2	2.0	2.2	2.7	3.3	3.8	4.6	+0.8
4.5-5.0	0.6	0.8	0.8	1.1	1.6	2.4	1.9	-0.5	1.6	1.3	1.4	1.8	2.2	3.0	3.3	+0.3
5.5-6.0 (High)	1.0	1.2	0.8	1.2	2.0	1.9	1.7	-0.2	1.8	1.3	0.9	1.6	1.7	2.8	2.9	+0.1
Race (2-year average)[b]																
White	—	0.9	1.0	1.2	1.8	2.4	2.5	+0.1	—	1.9	1.8	1.9	2.6	3.2	3.7	+0.5
Black	—	0.6	0.5	0.6	0.5	0.4	0.3	-0.1	—	0.5	0.5	0.9	0.8	0.6	0.6	0.0
Hispanic	—	2.6	3.3	4.0	4.3	4.1	3.3	-0.8	—	3.4	3.4	4.6	5.2	6.1	7.5	+1.4

NOTES: Level of significance of difference between the two most recent classes: s = .05, ss = .01, sss = .001.
'—' indicates data not available.
See Table D-39 for the number of subgroup cases.
See Appendix B for definition of variables in table.

SOURCE: The Monitoring the Future Study, the University of Michigan.

[a] Parental education is an average score of mother's education and father's education. See Appendix B for details.

[b] To derive percentages for each racial subgroup, data for the specified year *and* the previous year have been combined to increase subgroup sample sizes and thus provide more stable estimates.

TABLE D-14
Other Forms of Cocaine: Trends in Annual Prevalence of Use by Subgroups for Twelfth Graders

Percent who used in last twelve months

	Class of 1975	Class of 1976	Class of 1977	Class of 1978	Class of 1979	Class of 1980	Class of 1981	Class of 1982	Class of 1983	Class of 1984	Class of 1985	Class of 1986	Class of 1987	Class of 1988	Class of 1989	Class of 1990	Class of 1991	Class of 1992	Class of 1993	Class of 1994	Class of 1995	Class of 1996	Class of 1997	'96–'97 change
Approx. N =	9400	15400	17100	17800	15500	15900	17500	17700	16300	15900	16000	15200	16300	16300	16700	15200	15000	15800	16300	15400	15400	14300	15400	
Total	—	—	—	—	—	—	—	—	—	—	—	—	9.8	7.4	5.2	4.6	3.2	2.6	2.9	3.0	3.4	4.2	5.0	+0.8
Sex:																								
Male	—	—	—	—	—	—	—	—	—	—	—	—	10.1	8.0	6.5	5.8	3.7	3.1	3.7	3.7	4.0	4.9	5.7	+0.8
Female	—	—	—	—	—	—	—	—	—	—	—	—	9.1	6.2	4.0	3.2	2.4	2.0	2.0	2.3	2.5	3.2	4.0	+0.8
College Plans:																								
None or under 4 yrs	—	—	—	—	—	—	—	—	—	—	—	—	9.8	6.0	7.3	6.3	4.0	4.0	3.9	4.3	4.5	5.7	7.0	+1.3
Complete 4 yrs	—	—	—	—	—	—	—	—	—	—	—	—	8.3	6.7	4.2	3.7	2.8	2.0	2.5	2.5	2.9	3.5	4.1	+0.6
Region:																								
Northeast	—	—	—	—	—	—	—	—	—	—	—	—	12.9	7.0	4.9	5.6	3.4	2.8	2.3	2.8	4.2	5.2	5.9	+0.7
North Central	—	—	—	—	—	—	—	—	—	—	—	—	8.2	5.6	4.8	3.7	2.9	2.2	2.3	3.5	2.7	3.2	4.1	+0.9
South	—	—	—	—	—	—	—	—	—	—	—	—	5.8	5.8	4.6	4.1	2.8	2.5	2.6	2.6	3.1	4.2	4.6	+0.4
West	—	—	—	—	—	—	—	—	—	—	—	—	15.3	13.4	7.5	6.1	3.9	3.1	4.6	3.5	4.0	4.5	6.2	+1.7
Population Density:																								
Large MSA	—	—	—	—	—	—	—	—	—	—	—	—	13.3	9.8	5.6	5.0	3.7	3.1	2.6	2.6	3.7	3.9	4.2	+0.3
Other MSA	—	—	—	—	—	—	—	—	—	—	—	—	8.9	7.8	5.4	4.7	3.3	2.5	3.6	3.5	3.3	4.4	5.2	+0.8
Non-MSA	—	—	—	—	—	—	—	—	—	—	—	—	8.0	4.5	4.4	4.1	2.5	2.3	2.0	2.6	3.1	4.2	5.6	+1.4
Parental Education:[a]																								
1.0-2.0 (Low)	—	—	—	—	—	—	—	—	—	—	—	—	5.3	4.9	3.3	3.4	3.5	3.7	3.9	2.7	2.9	5.2	6.4	+1.2
2.5-3.0	—	—	—	—	—	—	—	—	—	—	—	—	10.5	6.5	4.6	5.0	3.5	2.3	2.3	3.2	3.4	3.8	4.9	+1.1
3.5-4.0	—	—	—	—	—	—	—	—	—	—	—	—	10.5	7.2	5.1	4.7	3.2	2.6	3.3	3.4	3.6	4.6	4.9	+0.3
4.5-5.0	—	—	—	—	—	—	—	—	—	—	—	—	9.0	7.7	6.1	4.1	2.7	2.3	2.9	2.6	3.2	3.9	4.4	+0.5
5.5-6.0 (High)	—	—	—	—	—	—	—	—	—	—	—	—	9.7	9.0	6.5	5.4	2.4	2.0	1.7	3.1	2.7	3.8	4.8	+1.0
Race (2-year average):[b]																								
White	—	—	—	—	—	—	—	—	—	—	—	—	—	9.3	7.0	5.3	4.2	2.9	2.6	2.9	3.3	3.9	5.0	+1.1
Black	—	—	—	—	—	—	—	—	—	—	—	—	—	2.8	1.4	0.7	1.0	1.0	0.7	0.8	0.8	0.7	0.7	0.0
Hispanic	—	—	—	—	—	—	—	—	—	—	—	—	—	6.3	5.1	5.1	5.0	4.3	5.1	5.1	4.0	5.6	6.9	+1.3

NOTES: Level of significance of difference between the two most recent classes: s = .05, ss = .01, sss = .001. '—' indicates data not available.
See Table D-40 for the number of subgroup cases.
See Appendix B for definition of variables in table.
Data based on one form in 1987-89; N is one-fifth of N indicated in 1987-88 and one-sixth of N indicated in 1989. Data based on four of six forms in 1990-97; N is four-sixths of N indicated.

SOURCE: The Monitoring the Future Study, the University of Michigan.

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[a] Parental education is an average score of mother's education and father's education. See Appendix B for details.

[b] To derive percentages for each racial subgroup, data for the specified year *and* the previous year have been combined to increase subgroup sample sizes and thus provide more stable estimates.

TABLE D-15
Heroin: Trends in Annual Prevalence of Use by Subgroups for Eighth and Tenth Graders

Percent who used in last twelve months

	8th Grade								10th Grade							
	1991	1992	1993	1994	1995[a]	1996[a]	1997[a]	'96–'97 change	1991	1992	1993	1994	1995[a]	1996[a]	1997[a]	'96–'97 change
Approx. N =	17500	18600	18300	17300	17500	17800	18600		14800	14800	15300	15800	17000	15600	15500	
Total	0.7	0.7	0.7	1.2	1.4	1.6	1.3	-0.3s	0.5	0.6	0.7	0.9	1.1	1.2	1.4	+0.2
Sex:																
Male	0.9	0.8	0.8	1.3	1.6	1.5	1.4	-0.1	0.7	0.8	0.9	1.0	1.3	1.5	1.6	+0.1
Female	0.5	0.7	0.5	0.9	1.2	1.5	1.1	-0.4	0.4	0.4	0.4	0.8	0.8	0.9	1.3	+0.4
College Plans:																
None or under 4 yrs	2.1	2.7	2.0	3.9	4.4	4.1	3.4	-0.7	1.4	1.4	1.9	2.0	2.2	2.4	2.9	+0.5
Complete 4 yrs	0.4	0.4	0.5	0.7	1.0	1.1	1.1	0.0	0.3	0.4	0.4	0.7	0.9	1.0	1.2	+0.2
Region:																
Northeast	0.5	0.6	0.7	1.3	1.4	1.8	1.1	-0.7s	0.4	0.6	0.6	0.6	0.9	0.9	1.3	+0.4
North Central	0.4	0.8	0.5	1.1	1.4	1.6	1.4	-0.2	0.6	0.6	0.8	0.9	1.0	1.5	1.5	0.0
South	0.8	0.7	0.7	1.1	1.5	1.4	1.2	-0.2	0.6	0.5	0.6	1.0	1.3	1.4	1.5	+0.1
West	1.0	0.7	1.1	1.1	1.2	1.6	1.4	-0.2	0.4	0.8	0.5	1.2	1.0	1.0	1.3	+0.3
Population Density:																
Large MSA	0.5	0.7	0.7	1.2	1.2	1.4	1.0	-0.4	0.6	0.6	0.7	0.8	1.0	1.1	1.6	+0.5
Other MSA	0.7	0.8	0.9	1.2	1.5	1.7	1.3	-0.4	0.5	0.6	0.6	0.9	1.0	1.3	1.3	0.0
Non-MSA	0.8	0.7	0.4	1.0	1.5	1.5	1.5	0.0	0.4	0.6	0.7	1.0	1.3	1.2	1.6	+0.4
Parental Education:[b]																
1.0-2.0 (Low)	1.5	1.4	0.8	2.0	2.6	2.0	2.3	+0.3	0.4	0.5	1.2	1.3	1.8	1.0	1.3	+0.3
2.5-3.0	0.9	0.7	0.6	1.1	1.0	1.7	1.4	-0.3	0.8	0.7	0.7	0.8	1.0	1.2	1.3	+0.1
3.5-4.0	0.6	0.6	0.7	1.3	1.6	1.7	1.0	-0.7s	0.5	0.6	0.8	0.9	1.2	1.3	1.6	+0.3
4.5-5.0	0.4	0.5	0.8	0.8	1.2	1.4	1.1	-0.3	0.4	0.5	0.3	0.9	0.9	1.1	1.5	+0.4
5.5-6.0 (High)	0.5	0.8	0.6	1.3	1.6	1.0	1.5	+0.5	0.4	0.5	0.8	0.9	0.9	1.5	1.1	-0.4
Race (2-year average):[c]																
White	—	0.6	0.6	0.8	1.2	1.6	1.6	0.0	—	0.6	0.7	0.8	1.0	1.2	1.4	+0.2
Black	—	0.4	0.3	0.6	0.7	0.5	0.4	-0.1	—	0.3	0.4	0.6	0.6	0.2	0.2	0.0
Hispanic	—	1.4	1.4	1.5	1.8	2.1	1.7	-0.4	—	0.7	0.7	0.7	1.0	1.0	1.3	+0.3

NOTES: Level of significance of difference between the two most recent classes: s = .05, ss = .01, sss = .001.
'—' indicates data not available.
See Table D-39 for the number of subgroup cases.
See Appendix B for definition of variables in table.

SOURCE: The Monitoring the Future Study, the University of Michigan.

[a] In 1995, the heroin question was changed in half of the forms. Separate questions were asked for use with injection and without injection. In 1996, the remaining form was also changed. Data presented here represent the combined data from all forms.

[b] Parental education is an average score of mother's education and father's education. See Appendix B for details.

[c] To derive percentages for each racial subgroup, data for the specified year *and* the previous year have been combined to increase subgroup sample sizes and thus provide more stable estimates.

TABLE D-16
Heroin: Trends in Annual Prevalence of Use by Subgroups for Twelfth Graders

Percent who used in last twelve months

	Class of 1975	Class of 1976	Class of 1977	Class of 1978	Class of 1979	Class of 1980	Class of 1981	Class of 1982	Class of 1983	Class of 1984	Class of 1985	Class of 1986	Class of 1987	Class of 1988	Class of 1989	Class of 1990	Class of 1991	Class of 1992	Class of 1993	Class of 1994	Class of 1995[a]	Class of 1996[a]	Class of 1997[a]	'96–'97 change
Approx. N =	9400	15400	17100	17800	15500	15900	17500	17700	16300	15900	16000	15200	16300	16300	16700	15200	15000	15800	16300	15400	15400	14300	15400	
Total	1.0	0.8	0.8	0.8	0.5	0.5	0.5	0.6	0.6	0.5	0.6	0.5	0.5	0.5	0.6	0.5	0.4	0.6	0.5	0.6	1.1	1.0	1.2	+0.2
Sex:																								
Male	1.2	1.0	1.2	1.1	0.6	0.6	0.6	0.8	0.7	0.7	0.8	0.7	0.7	0.7	0.9	0.6	0.6	0.8	0.7	0.8	1.4	1.3	1.5	+0.2
Female	0.8	0.5	0.4	0.6	0.3	0.4	0.3	0.4	0.4	0.3	0.3	0.2	0.3	0.3	0.4	0.3	0.3	0.3	0.3	0.4	0.8	0.7	0.9	+0.2
College Plans:																								
None or under 4 yrs	—	0.9	1.1	1.0	0.7	0.6	0.5	0.7	0.9	0.6	0.7	0.8	0.5	0.8	0.9	0.6	0.5	0.9	1.0	1.1	1.5	1.8	1.8	0.0
Complete 4 yrs	—	0.6	0.5	0.6	0.3	0.3	0.5	0.4	0.3	0.4	0.5	0.4	0.4	0.3	0.5	0.4	0.4	0.5	0.4	0.5	0.9	0.8	1.0	+0.2
Region:																								
Northeast	1.1	0.7	0.7	0.6	0.6	0.5	0.5	0.9	0.6	0.6	0.8	0.7	0.6	0.5	0.9	0.8	0.2	0.5	0.9	0.7	1.0	1.6	1.7	+0.1
North Central	1.3	1.0	1.0	0.8	0.5	0.7	0.6	0.5	0.4	0.6	0.6	0.4	0.6	0.3	0.6	0.3	0.8	0.6	0.5	0.9	0.7	0.7	0.9	+0.2
South	0.9	0.7	0.9	1.1	0.6	0.3	0.5	0.5	0.7	0.5	0.6	0.5	0.4	0.5	0.6	0.5	0.4	0.6	0.4	0.6	1.4	1.0	1.1	+0.1
West	0.7	0.6	0.5	0.8	0.2	0.4	0.5	0.3	0.5	0.4	0.3	0.5	0.5	0.7	0.7	0.3	0.3	0.8	0.5	0.4	1.0	0.9	1.2	+0.3
Population Density:																								
Large MSA	1.3	1.0	0.5	0.7	0.4	0.3	0.3	0.7	0.6	0.6	0.7	0.7	0.3	0.4	0.5	0.4	0.4	0.4	0.6	0.4	1.4	1.1	1.1	0.0
Other MSA	0.9	1.0	0.8	0.8	0.6	0.5	0.5	0.4	0.4	0.4	0.7	0.4	0.6	0.5	0.7	0.5	0.4	0.7	0.5	0.8	0.9	1.1	1.3	+0.2
Non-MSA	1.0	0.4	1.1	1.0	0.5	0.6	0.7	0.6	0.7	0.7	0.4	0.5	0.5	0.5	0.8	0.5	0.6	0.7	0.5	0.5	1.0	0.9	1.0	+0.1
Parental Education:[b]																								
1.0-2.0 (Low)	1.2	0.8	0.8	0.8	0.6	0.6	0.4	0.4	0.5	0.6	0.8	0.9	0.5	0.5	0.9	0.8	0.5	0.7	0.3	0.9	1.8	1.1	2.1	+1.0
2.5-3.0	0.8	0.9	0.8	0.9	0.5	0.6	0.6	0.7	0.6	0.5	0.5	0.4	0.4	0.7	0.7	0.4	0.4	0.6	0.4	0.8	1.1	0.9	1.0	+0.1
3.5-4.0	0.6	0.8	0.9	0.7	0.4	0.4	0.5	0.3	0.5	0.5	0.5	0.5	0.6	0.4	0.6	0.4	0.4	0.6	0.6	0.4	0.9	1.1	1.2	+0.1
4.5-5.0	1.2	1.4	0.6	0.9	0.6	0.4	0.3	0.6	0.4	0.4	0.7	0.3	0.3	0.3	0.6	0.4	0.6	0.7	0.7	0.3	1.1	1.0	1.1	+0.1
5.5-6.0 (High)	1.2	0.6	1.1	1.0	0.8	0.4	0.7	1.1	0.8	0.5	0.6	0.5	0.7	0.4	0.4	0.5	0.5	0.3	0.4	0.9	1.0	0.8	1.1	+0.3
Race (2-year average):[c]																								
White	—	—	0.8	0.8	0.6	0.5	0.4	0.5	0.5	0.5	0.5	0.5	0.4	0.4	0.5	0.6	0.5	0.5	0.5	0.5	0.8	1.0	1.2	+0.2
Black	—	—	0.6	0.6	0.5	0.5	0.6	0.7	0.6	0.4	0.5	0.5	0.5	0.7	0.6	0.3	0.2	0.5	0.4	0.3	0.4	0.5	0.5	0.0
Hispanic	—	—	1.2	2.0	1.7	0.4	0.3	0.4	0.6	1.1	1.0	0.9	0.9	0.5	0.5	0.6	0.6	0.9	0.7	0.5	1.2	1.5	1.1	-0.4

NOTES: Level of significance of difference between the two most recent classes: s = .05, ss = .01, sss = .001. '—' indicates data not available.
See Table D-40 for the number of subgroup cases.
See Appendix B for definition of variables in table.

SOURCE: The Monitoring the Future Study, the University of Michigan.

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[a] In 1995, the heroin question was changed in half of the forms. Separate questions were asked for use with injection and without injection. Data presented here represent the combined data from all forms.

[b] Parental education is an average score of mother's education and father's education. See Appendix B for details.

[c] To derive percentages for each racial subgroup, data for the specified year *and* the previous year have been combined to increase subgroup sample sizes and thus provide more stable estimates.

TABLE D-17
Other Opiates: Trends in Annual Prevalence of Use by Subgroups for Twelfth Graders

	Percent who used in last twelve months[a]																							
	Class of 1975	Class of 1976	Class of 1977	Class of 1978	Class of 1979	Class of 1980	Class of 1981	Class of 1982	Class of 1983	Class of 1984	Class of 1985	Class of 1986	Class of 1987	Class of 1988	Class of 1989	Class of 1990	Class of 1991	Class of 1992	Class of 1993	Class of 1994	Class of 1995	Class of 1996	Class of 1997	'96–'97 change
Approx. N =	9400	15400	17100	17800	15500	15900	17500	17700	16300	15900	16000	15200	16300	16300	16700	15200	15000	15800	16300	15400	15400	14300	15400	
Total	5.7	5.7	6.4	6.0	6.2	6.3	5.9	5.3	5.1	5.2	5.9	5.2	5.3	4.6	4.4	4.5	3.5	3.3	3.6	3.8	4.7	5.4	6.2	+0.8s
Sex:																								
Male	6.6	6.8	7.3	6.9	7.3	7.1	6.5	6.0	6.0	6.2	6.8	5.9	5.6	5.1	4.9	5.0	3.9	3.3	3.6	4.3	5.6	6.4	7.1	+0.7
Female	4.8	4.7	5.4	5.1	5.1	5.4	5.3	4.6	4.2	4.2	5.1	4.6	4.9	4.1	3.8	3.9	3.1	3.3	3.3	3.4	3.8	4.4	5.4	+1.0s
College Plans:																								
None or under 4 yrs	–	6.8	8.0	6.8	7.3	7.4	7.2	6.1	6.1	6.1	6.6	6.7	6.1	4.8	5.3	5.7	3.8	4.3	4.2	4.9	5.6	7.0	8.2	+1.2
Complete 4 yrs	–	4.6	4.7	4.9	5.0	5.1	4.8	4.6	4.3	4.3	5.4	4.3	4.8	4.6	3.9	4.0	3.5	3.0	3.3	3.5	4.4	4.9	5.7	+0.8s
Region:																								
Northeast	6.1	6.5	6.6	6.8	7.0	5.7	7.2	5.6	5.6	6.7	7.3	5.7	6.0	3.7	4.7	4.1	3.2	3.7	4.6	3.5	4.3	6.1	7.8	+1.7
North Central	6.2	6.2	7.5	6.7	6.1	7.6	6.2	5.5	5.3	4.8	6.3	5.8	5.2	4.4	5.7	4.6	4.2	3.6	3.2	4.7	5.2	6.0	6.1	+0.1
South	4.9	5.0	5.2	4.5	5.2	5.0	4.1	4.5	4.4	4.5	3.8	4.2	4.3	4.7	3.2	4.1	2.7	2.7	3.2	3.8	4.5	5.1	6.1	+1.0
West	5.4	5.0	6.0	6.7	7.1	6.8	7.2	6.2	5.2	5.3	7.1	5.4	6.1	5.7	4.9	5.3	4.4	3.5	4.0	3.1	4.7	4.1	4.7	+0.6
Population Density:																								
Large MSA	7.3	6.7	6.7	6.9	7.3	6.9	6.9	5.2	6.0	5.2	6.0	4.8	5.2	4.0	4.1	3.8	3.3	3.5	3.1	4.1	4.8	4.6	4.6	0.0
Other MSA	5.5	6.1	6.3	5.9	6.3	7.0	6.3	5.7	5.3	5.1	6.4	5.6	5.3	5.2	4.9	4.6	3.9	3.1	3.7	3.7	4.7	5.4	7.2	+1.8ss
Non-MSA	4.8	4.6	6.2	5.4	5.3	4.8	4.8	4.9	4.1	5.2	5.2	5.0	5.2	4.4	3.8	4.8	3.1	3.6	3.7	3.6	4.7	6.0	6.0	0.0
Parental Education:[b]																								
1.0-2.0 (Low)	5.4	5.0	5.1	5.0	5.2	5.2	4.8	4.8	4.8	4.7	4.5	4.7	4.1	3.9	3.6	3.8	3.8	3.5	3.8	3.0	4.0	4.5	4.7	+0.2
2.5-3.0	5.1	5.9	6.4	6.2	5.9	5.8	5.6	4.9	5.0	5.2	5.5	5.0	4.4	4.3	4.0	4.1	3.2	3.5	2.9	3.8	4.2	5.6	5.3	-0.3
3.5-4.0	4.2	6.3	6.7	6.0	6.3	6.9	6.6	5.2	4.5	5.1	6.5	6.0	5.6	4.3	4.6	4.6	3.7	3.2	3.7	3.4	4.4	5.5	6.5	+1.0
4.5-5.0	6.4	6.3	6.6	6.4	6.7	7.0	6.3	6.4	6.0	5.6	6.4	4.8	5.4	5.4	4.2	4.7	3.6	3.4	3.7	4.3	5.5	5.4	6.8	+1.4
5.5-6.0 (High)	6.5	6.5	7.9	6.1	7.8	6.8	6.8	7.1	5.3	4.9	6.8	5.4	7.8	5.6	6.4	5.7	4.1	3.2	4.5	4.8	5.5	5.6	7.6	+2.0s
Race (2-year average):[c]																								
White	–	–	6.6	6.7	6.6	6.8	6.7	6.2	5.8	5.7	6.3	6.3	6.0	5.8	5.3	5.2	4.7	4.1	4.1	4.3	5.0	5.9	7.1	+1.2s
Black	–	–	2.2	2.0	1.8	1.7	1.9	1.8	1.7	1.6	1.6	1.7	1.6	1.5	1.5	1.4	1.1	0.9	1.0	1.5	1.4	1.2	1.8	+0.6
Hispanic	–	–	3.8	3.5	3.5	3.7	4.3	4.1	4.0	4.2	3.6	3.0	2.4	2.2	2.5	2.4	2.3	2.1	2.3	2.2	2.5	3.7	3.1	-0.6

NOTES: Level of significance of difference between the two most recent classes: s = .05, ss = .01, sss = .001. '–' indicates data not available.
See Table D-40 for the number of subgroup cases.
See Appendix B for definition of variables in table.

SOURCE: The Monitoring the Future Study, the University of Michigan.

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[a] Only drug use which was not under a doctor's orders is included here.

[b] Parental education is an average score of mother's education and father's education. See Appendix B for details.

[c] To derive percentages for each racial subgroup, data for the specified year *and* the previous year have been combined to increase subgroup sample sizes and thus provide more stable estimates.

TABLE D-18
Stimulants: Trends in Annual Prevalence of Use by Subgroups for Eighth and Tenth Graders

Percent who used in last twelve months[a]

	8th Grade								10th Grade							
	1991	1992	1993	1994	1995	1996	1997	'96-'97 change	1991	1992	1993	1994	1995	1996	1997	'96-'97 change
Approx. N =	17500	18600	18300	17300	17500	17800	18600		14800	14800	15300	15800	17000	15600	15500	
Total	6.2	6.5	7.2	7.9	8.7	9.1	8.1	-1.0s	8.2	8.2	9.6	10.2	11.9	12.4	12.1	-0.3
Sex:																
Male	5.5	5.2	5.6	6.5	7.0	6.7	6.6	-0.1	7.0	7.0	8.2	8.6	9.6	10.5	10.3	-0.2
Female	6.9	7.9	8.8	9.3	10.3	11.3	9.6	-1.7s	9.3	9.3	10.9	11.7	14.1	14.2	13.9	-0.3
College Plans:																
None or under 4 yrs.	11.6	12.9	14.6	14.5	17.1	15.5	14.1	-1.4	13.4	14.4	15.5	16.6	19.9	20.3	19.3	-1.0
Complete 4 yrs.	5.4	5.7	6.3	7.0	7.6	8.3	7.5	-0.8	7.1	6.9	8.4	8.9	10.6	11.1	10.9	-0.2
Region:																
Northeast	5.1	4.3	5.9	6.9	7.3	7.6	6.5	-1.1	6.1	5.4	7.8	8.7	9.8	11.5	10.7	-0.8
North Central	7.1	8.0	7.3	7.8	10.6	10.8	9.3	-1.5	10.3	9.4	9.5	10.5	13.3	14.0	11.0	-3.0s
South	6.1	6.6	7.3	8.3	8.6	8.7	8.1	-0.6	8.1	8.7	10.9	11.2	12.8	12.6	14.2	+1.6
West	6.0	6.6	8.6	8.4	7.9	9.1	8.3	-0.8	7.7	8.4	9.5	9.4	10.6	10.6	11.1	+0.5
Population Density:																
Large MSA	5.8	4.8	5.6	6.6	7.2	7.9	6.4	-1.5	7.5	6.7	7.6	8.0	9.2	10.5	9.9	-0.6
Other MSA	6.2	7.5	8.2	8.8	8.9	10.0	8.1	-1.9s	7.9	8.0	9.5	10.8	12.8	12.8	11.5	-1.3
Non-MSA	6.7	7.0	7.5	7.5	10.1	8.9	9.9	+1.0	9.3	10.0	11.6	11.2	13.3	13.7	15.5	+1.8
Parental Education:[b]																
1.0-2.0 (Low)	8.3	8.4	10.2	11.2	11.8	10.1	9.6	-0.5	10.0	11.9	12.3	10.8	14.3	15.1	12.2	-2.9
2.5-3.0	6.6	7.3	8.2	9.0	10.6	9.9	9.2	-0.7	9.7	8.9	10.5	11.6	14.2	13.0	14.1	+1.1
3.5-4.0	6.7	7.4	7.8	8.5	10.1	10.3	8.9	-1.4	7.9	8.4	10.5	11.1	12.4	14.1	13.5	-0.6
4.5-5.0	5.3	5.5	6.4	6.6	6.8	8.6	7.5	-1.1	7.4	6.6	7.5	8.9	10.7	10.7	10.6	-0.1
5.5-6.0 (High)	5.7	5.4	5.3	5.7	6.4	8.7	7.3	-1.4	6.9	6.9	8.3	7.3	8.8	10.1	9.2	-0.9
Race (2-year average):[c]																
White	—	6.8	7.4	8.1	9.3	10.2	9.9	-0.3	—	9.4	10.1	11.0	12.4	13.9	14.2	+0.3
Black	—	3.3	3.4	3.9	3.9	3.4	3.0	-0.4	—	2.8	3.0	4.0	4.0	3.4	3.1	-0.3
Hispanic	—	7.2	7.7	8.6	8.7	8.6	8.1	-0.5	—	6.2	7.0	7.7	8.9	10.3	9.8	-0.5

NOTES: Level of significance of difference between the two most recent classes: s = .05, ss = .01, sss = .001.
'—' indicates data not available.
See Table D-39 for the number of subgroup cases.
See Appendix B for definition of variables in table.

SOURCE: The Monitoring the Future Study, the University of Michigan.

[a] Only drug use not under a doctor's orders is included here.

[b] Parental education is an average score of mother's education and father's education. See Appendix B for details.

[c] To derive percentages for each racial subgroup, data for the specified year *and* the previous year have been combined to increase subgroup sample sizes and thus provide more stable estimates.

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TABLE D-19
Stimulants, Adjusted: Trends in Annual Prevalence of Use by Subgroups for Twelfth Graders

	Percent who used in last twelve months[a]																							
	Class of 1975	Class of 1976	Class of 1977	Class of 1978	Class of 1979	Class of 1980	Class of 1981	Class of 1982	Class of 1983	Class of 1984	Class of 1985	Class of 1986	Class of 1987	Class of 1988	Class of 1989	Class of 1990	Class of 1991	Class of 1992	Class of 1993	Class of 1994	Class of 1995	Class of 1996	Class of 1997	'96-'97 change
Approx. N =	9400	15400	17100	17800	15500	15900	17500	17700	16300	15900	16000	15200	16300	16300	16700	15200	15000	15800	16300	15400	15400	14300	15400	
Total	16.2	15.8	16.3	17.1	18.3	20.8	26.0	20.3	17.9	17.7	15.8	13.4	12.2	10.9	10.8	9.1	8.2	7.1	8.4	9.4	9.3	9.5	10.2	+0.7
Sex:																								
Male	15.6	15.8	16.0	16.9	18.4	19.7	24.8	19.6	17.2	16.8	14.9	12.7	11.8	10.8	11.1	9.4	8.3	7.2	8.2	9.2	9.5	9.6	10.1	+0.5
Female	16.5	15.4	16.4	17.1	17.8	21.8	26.9	20.3	17.9	18.2	16.4	13.8	12.4	10.9	10.5	8.6	7.9	6.9	8.5	9.4	8.9	8.8	10.2	+1.4
College Plans:																								
None or under 4 yrs.	—	19.3	20.5	20.0	21.8	25.8	30.9	23.7	20.9	22.2	19.7	17.7	16.0	13.9	15.1	12.6	11.0	9.7	11.0	13.4	12.3	12.8	14.1	+1.3
Complete 4 yrs.	—	11.9	11.5	13.7	14.5	16.5	22.3	16.8	14.5	14.2	13.3	10.9	10.2	9.5	9.1	7.4	7.0	6.1	7.6	8.0	8.3	8.4	8.9	+0.5
Region:																								
Northeast	16.5	14.7	16.8	19.6	22.0	22.0	28.8	21.5	17.9	19.0	16.8	12.6	10.4	8.4	9.0	6.3	6.5	6.2	8.1	7.4	9.6	10.4	11.1	+0.7
North Central	18.7	17.8	19.0	18.2	18.3	22.2	30.1	24.1	20.4	20.3	17.3	15.2	13.5	12.2	13.3	10.7	10.1	8.4	8.9	12.0	9.5	10.0	10.8	+0.8
South	12.6	13.7	13.2	14.0	14.0	17.7	19.6	16.4	15.4	15.1	12.8	11.5	11.5	10.8	9.9	8.9	7.9	6.7	8.3	9.0	9.2	9.1	9.8	+0.7
West	18.5	17.2	16.0	17.8	20.7	22.1	26.6	18.7	18.2	16.9	17.3	15.0	13.4	11.8	11.1	10.2	7.8	6.9	8.3	8.4	8.9	8.3	9.1	+0.8
Population Density:																								
Large MSA	19.6	15.4	15.3	17.7	19.5	21.9	28.0	21.6	18.1	17.7	15.0	11.2	10.9	8.8	7.1	6.5	6.2	6.0	6.5	7.8	9.1	7.9	8.9	+1.0
Other MSA	15.5	16.3	17.1	17.5	18.9	20.8	25.5	20.7	19.6	17.1	15.7	14.2	11.9	11.9	11.4	9.6	8.4	6.7	8.5	9.4	8.5	8.9	9.5	+0.6
Non-MSA	14.8	15.4	15.9	16.0	16.6	19.9	25.1	18.8	15.6	18.5	16.6	14.1	14.0	11.3	13.3	10.6	9.5	9.0	9.8	10.9	10.8	11.9	13.0	+1.1
Parental Education:[b]																								
1.0-2.0 (Low)	15.7	13.4	14.5	14.9	16.0	19.1	22.3	18.7	15.7	17.1	14.5	11.9	11.9	9.8	10.4	7.6	9.5	7.0	9.0	10.4	9.9	8.1	9.8	+1.7
2.5-3.0	16.7	16.9	17.4	17.3	18.4	22.2	26.7	21.9	19.6	19.2	17.0	15.2	13.3	11.1	11.7	9.7	9.1	7.7	8.6	10.3	9.9	10.5	10.3	-0.2
3.5-4.0	14.9	16.6	16.1	18.2	19.6	21.5	26.9	21.7	19.4	18.5	17.2	14.3	12.6	11.8	12.3	10.6	8.9	7.7	9.1	9.4	9.1	9.3	10.8	+1.5
4.5-5.0	14.5	16.8	15.9	16.9	17.1	20.0	26.2	19.1	18.9	15.9	15.1	12.0	11.7	10.3	9.4	8.1	6.5	6.3	8.0	9.5	9.2	8.9	9.4	+0.5
5.5-6.0 (High)	12.0	14.6	16.0	17.2	20.4	17.9	26.8	20.5	16.1	14.0	10.9	10.1	10.4	10.0	9.1	7.3	5.7	5.8	7.6	7.1	8.1	9.1	10.2	+1.1
Race (2-year average)[c]																								
White	—	—	17.3	18.2	19.2	21.3	26.4	23.6	22.3	20.5	18.9	16.4	14.3	13.0	12.4	11.4	9.8	8.8	9.0	10.4	10.7	10.5	11.4	+0.9
Black	—	—	5.3	4.7	4.2	5.3	5.8	6.0	5.7	4.7	4.3	4.0	3.8	3.9	3.6	3.1	2.7	2.2	2.3	3.4	3.4	2.9	2.8	-0.1
Hispanic	—	—	12.3	12.2	12.8	14.5	17.5	12.3	11.5	13.2	14.6	10.8	8.7	9.6	9.0	7.0	6.1	6.0	6.2	6.4	7.1	7.8	7.3	-0.5

NOTES: Level of significance of difference between the two most recent classes: s = .05, ss = .01, sss = .001. '—' indicates data not available.
See Table D-40 for the number of subgroup cases.
See Appendix B for definition of variables in table.

SOURCE: The Monitoring the Future Study, the University of Michigan.

[a] Beginning in 1982, the question about stimulant use (i.e., amphetamines) was revised to get respondents to exclude the inappropriate reporting of nonprescription stimulants. The prevalence rate dropped slightly as a result of this methodological change. (In 1982 and 1983, these data were based on three of the five questionnaire forms.) Only drug use which was not under a doctor's orders is included here.

[b] Parental education is an average score of mother's education and father's education. See Appendix B for details.

[c] To derive percentages for each racial subgroup, data for the specified year *and* the previous year have been combined to increase subgroup sample sizes and thus provide more stable estimates.

TABLE D-20

Barbiturates: Trends in Annual Prevalence of Use by Subgroups for Twelfth Graders

	Percent who used in last twelve months[a]																							
	Class of 1975	Class of 1976	Class of 1977	Class of 1978	Class of 1979	Class of 1980	Class of 1981	Class of 1982	Class of 1983	Class of 1984	Class of 1985	Class of 1986	Class of 1987	Class of 1988	Class of 1989	Class of 1990	Class of 1991	Class of 1992	Class of 1993	Class of 1994	Class of 1995	Class of 1996	Class of 1997	'96–'97 change
Approx. N =	9400	15400	17100	17800	15500	15900	17500	17700	16300	15900	16000	15200	16300	16300	16700	15200	15000	15800	16300	15400	15400	14300	15400	
Total	10.7	9.6	9.3	8.1	7.5	6.8	6.6	5.5	5.2	4.9	4.6	4.2	3.6	3.2	3.3	3.4	3.4	2.8	3.4	4.1	4.7	4.9	5.1	+0.2
Sex:																								
Male	12.3	9.9	10.2	8.4	7.6	7.3	7.2	5.9	5.9	5.5	5.2	4.7	4.0	3.4	3.5	3.8	3.4	2.9	3.4	4.3	5.1	5.2	5.3	+0.1
Female	9.9	9.2	8.4	7.7	7.0	6.0	5.8	5.0	4.2	4.0	3.9	3.8	3.2	3.0	3.0	3.0	3.2	2.6	3.3	3.8	4.2	4.4	4.8	+0.4
College Plans:																								
None or under 4 yrs.	—	11.6	11.4	9.1	9.3	9.0	8.1	7.4	6.7	6.2	6.2	6.1	4.7	4.1	4.8	4.7	4.3	3.9	3.8	5.4	5.9	6.7	6.6	-0.1
Complete 4 yrs.	—	7.3	6.8	6.8	5.2	4.8	5.1	3.8	3.8	3.7	3.6	3.0	3.0	2.7	2.5	2.8	2.9	2.3	3.2	3.7	4.4	4.3	4.6	+0.3
Region:																								
Northeast	11.5	10.4	9.2	9.6	9.6	6.9	6.8	5.6	4.7	5.1	5.3	5.2	4.2	2.5	3.2	2.9	2.8	2.7	3.5	4.0	4.1	5.6	5.7	+0.1
North Central	12.8	10.4	10.7	7.9	6.9	7.3	7.5	5.4	6.1	4.9	4.9	4.2	3.3	2.5	3.2	3.5	3.5	2.7	3.5	4.1	4.5	4.9	4.4	-0.5
South	9.9	9.7	9.3	7.8	7.3	7.0	5.5	6.3	5.2	5.2	4.2	4.1	3.7	4.1	3.7	4.0	3.6	3.0	3.6	4.8	5.3	5.4	5.8	+0.4
West	10.0	6.7	6.6	6.6	5.7	5.2	6.5	3.9	4.0	4.2	4.1	3.3	3.2	3.2	2.7	2.9	3.3	2.5	2.7	2.8	4.3	3.3	4.2	+0.9
Population Density:																								
Large MSA	11.1	10.2	8.1	8.1	8.3	6.6	6.9	5.3	5.2	4.4	4.4	3.7	3.3	2.8	2.6	2.6	2.4	2.4	2.6	3.6	4.1	3.6	4.2	+0.6
Other MSA	11.3	9.8	9.9	8.2	7.3	6.5	6.4	5.7	5.3	4.9	4.2	4.4	3.6	3.4	3.1	3.6	3.9	2.6	3.1	4.3	4.9	5.4	5.0	-0.4
Non-MSA	9.8	9.0	9.5	8.1	7.0	7.2	6.6	5.5	5.0	5.5	5.4	4.5	3.9	3.2	4.4	3.9	3.3	3.4	4.3	4.1	5.0	5.4	6.4	+1.0
Parental Education:[b]																								
1.0-2.0 (Low)	10.3	9.1	8.0	7.5	7.8	8.0	6.5	5.8	6.1	4.7	5.0	4.8	3.8	4.3	4.1	3.1	3.6	3.9	3.8	4.5	4.9	4.8	4.3	-0.5
2.5-3.0	10.3	10.2	10.3	8.2	7.3	7.2	6.5	5.7	5.7	5.2	5.3	4.6	3.6	3.1	3.4	3.7	3.7	2.4	3.6	4.5	5.2	4.9	4.9	0.0
3.5-4.0	9.5	9.6	9.0	8.3	7.4	6.3	6.5	5.1	4.6	5.0	4.4	4.4	3.2	2.9	3.2	3.9	3.0	2.8	2.8	4.0	4.6	4.9	6.0	+1.1
4.5-5.0	10.7	10.1	9.1	7.8	6.6	5.9	6.4	5.0	4.4	4.3	4.1	3.3	3.9	3.3	2.8	3.1	3.3	2.9	3.4	4.0	4.4	5.0	5.1	+0.1
5.5-6.0 (High)	9.0	10.3	8.3	8.0	7.2	5.4	6.8	5.8	3.7	4.0	3.1	3.4	3.6	3.1	3.4	2.9	3.6	2.4	3.8	3.6	4.1	4.6	4.6	0.0
Race (2-year average):[c]																								
White	—	—	10.2	9.3	8.2	7.5	7.2	6.5	5.8	5.5	5.1	4.7	4.2	3.7	3.5	3.7	3.8	3.5	3.6	4.3	4.9	5.4	5.9	+0.5
Black	—	—	3.3	3.2	2.6	2.5	2.4	2.0	1.7	1.6	1.6	1.6	1.7	1.5	1.1	1.1	1.2	1.1	1.0	1.5	1.6	1.1	1.0	-0.1
Hispanic	—	—	7.4	5.8	5.8	5.8	5.7	5.1	4.1	4.4	4.6	3.6	2.8	2.8	3.2	2.8	2.4	2.2	1.9	2.6	3.5	4.0	3.7	-0.3

NOTES: Level of significance of difference between the two most recent classes: s = .05, ss = .01, sss = .001. '—' indicates data not available.
See Table D-40 for the number of subgroup cases.
See Appendix B for definition of variables in table.

SOURCE: The Monitoring the Future Study, the University of Michigan.

[a] Only drug use which was not under a doctor's orders is included here.

[b] Parental education is an average score of mother's education and father's education. See Appendix B for details.

[c] To derive percentages for each racial subgroup, data for the specified year *and* the previous year have been combined to increase subgroup sample sizes and thus provide more stable estimates.

TABLE D-21
Tranquilizers: Trends in Annual Prevalence of Use by Subgroups for Eighth and Tenth Graders

Percent who used in last twelve months[a]

	8th Grade								10th Grade							
	1991	1992	1993	1994	1995	1996	1997	'96–'97 change	1991	1992	1993	1994	1995	1996	1997	'96–'97 change
Approx. N =	17500	18600	18300	17300	17500	17800	18600		14800	14800	15300	15800	17000	15600	15500	
Total	1.8	2.0	2.1	2.4	2.7	3.3	2.9	-0.4	3.2	3.5	3.3	3.3	4.0	4.6	4.9	+0.3
Sex:																
Male	1.5	1.6	1.8	1.9	2.0	2.3	2.6	+0.3	2.5	2.7	3.2	3.0	4.0	4.3	4.7	+0.4
Female	2.1	2.3	2.4	2.8	3.3	4.0	3.2	-0.8s	3.8	4.3	3.2	3.6	4.0	4.9	5.2	+0.3
College Plans:																
None or under 4 yrs	3.9	4.9	3.6	5.1	5.9	6.4	5.8	-0.6	5.0	6.0	5.8	6.0	7.4	9.4	8.6	-0.8
Complete 4 yrs	1.5	1.5	1.9	2.0	2.3	2.8	2.6	-0.2	2.8	3.1	2.7	2.8	3.4	3.8	4.3	+0.5
Region:																
Northeast	1.0	1.6	1.7	2.5	2.3	2.7	2.5	-0.2	2.7	2.8	3.4	2.8	2.6	3.9	3.6	-0.3
North Central	1.4	1.9	1.3	1.7	2.6	3.5	2.4	-1.1s	2.4	3.0	2.5	2.6	3.2	4.4	3.7	-0.7
South	2.6	2.5	2.4	2.6	3.0	3.7	3.3	-0.4	4.2	4.5	3.9	4.2	5.1	5.7	7.3	+1.6s
West	1.8	1.6	3.0	2.7	2.4	2.9	3.0	+0.1	2.9	3.2	3.2	3.6	4.3	3.6	3.7	+0.1
Population Density:																
Large MSA	1.8	2.1	1.7	2.5	1.8	3.2	2.1	-1.1s	3.2	3.3	2.7	2.6	3.2	4.2	3.9	-0.3
Other MSA	1.7	1.8	2.5	2.6	3.2	3.4	3.2	-0.2	3.0	3.8	3.3	3.9	4.1	4.6	4.4	-0.2
Non-MSA	2.2	2.2	1.6	1.9	2.6	3.1	3.2	+0.1	3.5	3.3	3.6	3.0	4.7	5.2	7.0	+1.8s
Parental Education:[b]																
1.0-2.0 (Low)	3.6	3.8	2.5	3.2	3.9	4.9	4.3	-0.6	3.3	5.3	4.8	4.2	5.0	5.9	4.7	-1.2
2.5-3.0	1.6	2.1	2.5	2.6	2.7	3.5	3.1	-0.4	3.6	3.5	3.1	3.3	4.5	5.2	5.3	+0.1
3.5-4.0	2.0	2.2	2.1	2.6	3.2	3.9	3.2	-0.7	3.2	3.4	3.5	3.4	4.3	5.0	5.5	+0.5
4.5-5.0	1.4	0.9	1.8	2.0	2.2	2.8	2.4	-0.4	2.5	3.9	2.9	2.9	3.5	4.1	4.2	+0.1
5.5-6.0 (High)	1.8	1.9	1.7	2.1	1.6	2.7	2.7	0.0	3.5	2.3	3.1	3.4	3.2	3.6	4.4	+0.8
Race (2-year average):[c]																
White	—	2.0	2.0	2.2	2.7	3.2	3.4	+0.2	—	4.0	3.8	3.6	4.1	4.9	5.6	+0.7
Black	—	0.9	1.1	1.2	1.2	1.3	1.2	-0.1	—	0.9	0.9	0.9	0.8	0.7	0.9	+0.2
Hispanic	—	2.7	3.1	3.4	3.3	3.5	3.5	0.0	—	2.9	3.3	3.1	3.1	3.4	3.5	+0.1

NOTES: Level of significance of difference between the two most recent classes: s = .05, ss = .01, sss = .001.
'—' indicates data not available.
See Table D-39 for the number of subgroup cases.
See Appendix B for definition of variables in table.

SOURCE: The Monitoring the Future Study, the University of Michigan.

[a] Only drug use not under a doctor's orders is included here.

[b] Parental education is an average score of mother's education and father's education. See Appendix B for details.

[c] To derive percentages for each racial subgroup, data for the specified year *and* the previous year have been combined to increase subgroup sample sizes and thus provide more stable estimates.

TABLE D-22
Tranquilizers: Trends in Annual Prevalence of Use by Subgroups for Twelfth Graders

	Percent who used in last twelve months[a]																							
	Class of 1975	Class of 1976	Class of 1977	Class of 1978	Class of 1979	Class of 1980	Class of 1981	Class of 1982	Class of 1983	Class of 1984	Class of 1985	Class of 1986	Class of 1987	Class of 1988	Class of 1989	Class of 1990	Class of 1991	Class of 1992	Class of 1993	Class of 1994	Class of 1995	Class of 1996	Class of 1997	'96–'97 change
Approx. N =	9400	15400	17100	17800	15500	15900	17500	17700	16300	15900	16000	15200	16300	16300	16700	15200	15000	15800	16300	15400	15400	14300	15400	
Total	10.6	10.3	10.8	9.9	9.6	8.7	8.0	7.0	6.9	6.1	6.1	5.8	5.5	4.8	3.8	3.5	3.6	2.8	3.5	3.7	4.4	4.6	4.7	+0.1
Sex:																								
Male	10.0	9.4	10.2	9.7	9.9	9.0	8.0	6.9	7.0	6.3	6.4	5.9	5.2	4.7	4.0	3.5	3.5	2.7	3.5	4.0	4.7	5.0	5.4	+0.4
Female	11.1	11.0	11.4	10.1	9.3	8.5	7.7	7.1	6.7	5.8	5.7	5.8	5.8	4.8	3.5	3.5	3.6	3.0	3.3	3.5	4.1	4.0	3.9	-0.1
College Plans:																								
None or under 4 yrs		11.5	12.3	11.1	11.0	10.7	9.4	8.0	8.0	7.4	6.8	7.2	6.7	5.1	4.8	4.3	4.2	3.9	3.9	4.5	5.6	5.6	6.2	+0.6
Complete 4 yrs	-	8.9	9.0	8.6	8.1	7.2	6.9	6.3	5.8	5.2	5.5	5.1	4.9	4.6	3.3	3.2	3.4	2.5	3.3	3.5	4.1	4.2	4.0	-0.2
Region:																								
Northeast	9.2	9.7	10.4	10.9	11.5	8.6	8.3	7.8	6.8	6.8	7.1	6.4	6.9	4.5	3.7	2.9	3.0	3.0	3.7	3.5	3.9	4.8	5.3	+0.5
North Central	10.6	10.1	11.0	8.8	7.5	8.2	7.8	6.2	6.8	5.6	6.0	5.5	4.5	3.7	3.1	2.9	3.0	2.3	2.8	3.1	4.0	4.4	3.5	-0.9
South	11.3	11.7	11.4	10.5	10.4	9.5	7.8	7.4	7.4	6.9	5.9	6.3	5.7	6.0	4.4	4.3	4.0	3.5	4.2	4.8	5.0	5.3	5.4	+0.1
West	11.7	8.5	9.6	8.9	9.4	8.6	8.0	6.4	6.2	4.9	5.3	4.8	5.2	4.4	3.4	3.9	4.4	2.3	3.0	2.8	4.3	3.0	4.3	+1.3
Population Density:																								
Large MSA	11.2	9.6	9.6	10.3	9.9	8.7	8.3	7.0	7.0	5.4	5.8	5.3	5.8	4.7	3.1	3.6	2.5	2.9	2.9	3.9	4.0	3.7	4.2	+0.5
Other MSA	11.0	11.3	11.4	10.1	10.2	9.3	8.1	7.2	7.2	6.1	6.0	5.7	5.6	5.0	3.5	3.7	4.1	2.7	3.6	3.7	4.5	4.9	4.8	-0.1
Non-MSA	9.9	9.5	11.0	9.2	8.7	8.0	7.5	6.8	6.5	6.8	6.5	6.4	5.2	4.5	4.9	3.3	3.7	3.1	3.7	3.5	4.8	4.7	5.1	+0.4
Parental Education:[b]																								
1.0-2.0 (Low)	11.2	10.1	9.4	9.4	9.1	7.8	7.1	6.1	6.0	6.5	5.3	6.7	5.7	3.9	3.6	3.4	4.0	3.9	3.3	4.2	3.9	4.2	3.9	-0.3
2.5-3.0	9.8	10.3	11.5	10.1	8.8	9.1	8.0	7.3	7.2	6.5	6.2	5.8	5.4	4.6	3.9	3.2	3.6	2.8	3.3	3.5	4.7	4.0	4.3	+0.3
3.5-4.0	9.8	11.2	11.1	9.5	10.4	8.9	8.3	6.7	6.9	5.8	6.4	6.5	5.3	4.5	3.4	4.4	3.1	2.7	3.5	3.6	4.3	4.7	4.6	-0.1
4.5-5.0	11.3	11.7	11.4	10.5	10.0	8.1	7.4	7.6	6.6	5.8	6.3	4.7	5.9	5.5	3.8	3.1	3.9	3.0	3.4	3.7	4.5	4.6	5.4	+0.8
5.5-6.0 (High)	9.3	12.0	10.1	11.0	11.4	10.3	9.1	7.6	7.1	6.3	5.5	5.4	5.4	5.6	4.9	4.0	4.0	2.2	4.2	4.2	4.1	5.3	5.1	-0.2
Race (2-year average):[c]																								
White	—	—	11.4	11.1	10.5	9.9	9.1	8.3	7.8	7.3	6.8	6.6	6.3	5.9	5.0	4.2	4.1	3.7	3.7	4.2	4.6	5.1	5.5	+0.4
Black	—	—	4.3	4.2	3.6	3.1	3.0	2.5	2.3	2.1	1.7	1.7	2.0	2.0	1.2	0.7	0.9	1.3	1.0	1.1	1.2	0.9	0.8	-0.1
Hispanic	—	—	8.4	8.2	7.4	6.4	5.7	5.8	5.1	5.3	5.0	4.4	3.7	2.5	1.6	1.9	2.7	2.4	2.0	2.4	3.5	4.3	3.8	-0.5

NOTES: Level of significance of difference between the two most recent classes: s = .05, ss = .01, sss = .001. '—' indicates data not available.
See Table D-40 for the number of subgroup cases.
See Appendix B for definition of variables in table.

SOURCE: The Monitoring the Future Study, the University of Michigan.

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[a] Only drug use which was not under a doctor's orders are included here.

[b] Parental education is an average score of mother's education and father's education. See Appendix B for details.

[c] To derive percentages for each racial subgroup, data for the specified year *and* the previous year have been combined to increase subgroup sample sizes and thus provide more stable estimates.

TABLE D-23
Alcohol: Trends in Thirty-Day Prevalence of Use by Subgroups for Eighth and Tenth Graders

Percent who used in last thirty days

	8th Grade								10th Grade							
	1991	1992	1993[a]	1994	1995	1996	1997	'96–'97 change	1991	1992	1993[a]	1994	1995	1996	1997	'96–'97 change
Approx. N =	17500	18600	18300	17300	17500	17800	18600		14800	14800	15300	15800	17000	15600	15500	
Total	26.1	26.1	26.2	—	—	—	—	—	42.8	39.9	41.5	—	—	—	—	—
			24.3	25.5	24.6	26.2	24.5	-1.7			38.2	39.2	38.8	40.4	40.1	-0.3
Sex:																
Male	26.3	26.3	26.7	—	—	—	—	—	45.5	41.6	43.4	—	—	—	—	—
			25.3	26.5	25.0	26.6	25.2	-1.4			40.6	43.5	39.7	42.6	42.5	-0.1
Female	23.8	25.9	26.1	—	—	—	—	—	40.2	38.3	39.4	—	—	—	—	—
			23.7	24.7	24.0	25.8	23.9	-1.9			35.6	34.8	37.8	38.3	37.9	-0.4
College Plans:																
None or under 4 yrs	37.2	39.6	39.2	—	—	—	—	—	53.6	49.5	53.5	—	—	—	—	—
			41.1	41.4	40.0	41.7	40.2	-1.5			48.6	52.0	52.2	53.3	51.6	-1.7
Complete 4 yrs.	23.1	24.2	24.8	—	—	—	—	—	40.6	37.9	39.1	—	—	—	—	—
			22.2	23.6	22.6	24.0	22.8	-1.2			36.1	36.4	36.4	38.3	38.1	-0.2
Region:																
Northeast	24.3	23.8	24.8	—	—	—	—	—	48.0	42.3	43.5	—	—	—	—	—
			21.0	25.4	24.1	26.9	24.8	-2.1			42.4	37.4	38.3	41.4	41.1	-0.3
North Central	26.6	28.3	25.8	—	—	—	—	—	43.5	40.3	42.5	—	—	—	—	—
			24.7	24.2	24.7	26.9	22.8	-4.1s			37.4	39.6	38.9	39.1	38.6	-0.5
South	25.1	26.8	26.4	—	—	—	—	—	41.7	38.2	40.4	—	—	—	—	—
			25.4	25.6	25.5	26.3	26.4	+0.1			38.0	40.5	39.4	41.7	40.8	-0.9
West	23.1	23.5	27.9	—	—	—	—	—	39.6	39.8	39.7	—	—	—	—	—
			25.6	27.2	23.1	24.8	22.7	-2.1			35.6	38.2	38.0	38.9	39.9	+1.0
Population Density:																
Large MSA	25.4	27.4	24.7	—	—	—	—	—	43.6	40.4	40.9	—	—	—	—	—
			21.2	23.8	22.3	24.9	23.1	-1.8			39.0	36.3	34.6	37.9	37.8	-0.1
Other MSA	24.3	26.1	27.6	—	—	—	—	—	41.4	38.6	38.8	—	—	—	—	—
			26.0	27.4	25.3	27.4	24.9	-2.5			36.2	40.1	39.9	41.0	40.2	-0.8
Non-MSA	26.2	24.2	25.1	—	—	—	—	—	44.8	41.9	47.0	—	—	—	—	—
			24.9	23.8	26.0	25.7	25.4	-0.3			41.3	40.6	41.3	42.1	42.6	+0.5
Parental Education:[b]																
1.0-2.0 (Low)	30.7	32.8	32.5	—	—	—	—	—	42.1	40.4	41.3	—	—	—	—	—
			28.0	33.5	30.8	28.1	29.7	+1.6			37.5	38.6	43.5	43.2	39.2	-4.0
2.5-3.0	27.0	27.2	26.0	—	—	—	—	—	43.9	40.9	44.9	—	—	—	—	—
			28.0	27.4	27.8	30.1	26.2	-3.9ss			40.6	41.5	42.3	42.6	41.1	-1.5
3.5-4.0	25.1	26.3	28.2	—	—	—	—	—	44.2	40.0	41.8	—	—	—	—	—
			25.9	26.7	26.8	27.6	27.8	+0.2			38.0	40.6	38.8	42.2	41.6	-0.6
4.5-5.0	22.8	24.6	23.1	—	—	—	—	—	40.7	39.4	38.3	—	—	—	—	—
			20.6	22.6	21.0	25.0	22.6	-2.4			36.2	37.7	37.9	37.8	39.3	+1.5
5.5-6.0 (High)	24.0	25.2	26.2	—	—	—	—	—	44.9	41.7	39.9	—	—	—	—	—
			22.3	23.6	20.5	21.5	20.5	-1.0			39.3	35.4	34.3	39.6	38.9	-0.7
Race (2-year average):[c]																
White	—	26.6	27.1	—	—	—	—	—	—	44.1	43.1	—	—	—	—	—
			—	25.3	25.4	26.6	26.7	+0.1			—	40.4	41.0	42.2	43.0	+0.8
Black	—	18.6	19.7	—	—	—	—	—	—	30.2	29.3	—	—	—	—	—
			—	19.4	18.7	18.1	17.9	-0.2			—	29.7	28.0	23.9	24.6	+0.7
Hispanic	—	31.0	32.3	—	—	—	—	—	—	41.0	39.9	—	—	—	—	—
			—	33.5	32.4	29.7	29.8	+0.1			—	37.7	40.5	44.0	42.8	-1.2

NOTES: Level of significance of difference between the two most recent classes: s =.05, ss =.01, sss =.001. '—' indicates data not available. See Table D-39 for the number of subgroup cases. See Appendix B for definition of variables in table.

SOURCE: The Monitoring the Future Study, the University of Michigan.

[a] In 1993, the question text was changed slightly in one form to indicate that a "drink" meant "more than a few sips." The data in the upper line for each subgroup came from the form using the original wording, while the data in the lower line came from the form using the revised wording. N is one-half of N indicated for each line. Beginning in 1994, data based on both forms.

[b] Parental education is an average score of mother's education and father's education. See Appendix B for details.

[c] To derive percentages for each racial subgroup, data for the specified year *and* the previous year have been combined to increase subgroup sample sizes and thus provide more stable estimates.

TABLE D-24
Alcohol: Trends in Thirty-Day Prevalence of Use by Subgroups for Twelfth Graders

	Percent who used in last thirty days																							
	Class of 1975	Class of 1976	Class of 1977	Class of 1978	Class of 1979	Class of 1980	Class of 1981	Class of 1982	Class of 1983	Class of 1984	Class of 1985	Class of 1986	Class of 1987	Class of 1988	Class of 1989	Class of 1990	Class of 1991	Class of 1992	Class of 1993[a]	Class of 1994	Class of 1995	Class of 1996	Class of 1997	'96–'97 change
Approx. N =	9400	15400	17100	17800	15500	15900	17500	17700	16300	15900	16000	15200	16300	16300	16700	15200	15000	15800	16300	15400	15400	14300	15400	
Total	68.2	68.3	71.2	72.1	71.8	72.0	70.7	69.7	69.4	67.2	65.9	65.3	66.4	63.9	60.0	57.1	54.0	51.3	51.0 48.6	— 50.1	— 51.3	— 50.8	— 52.7	— +1.9
Sex:																								
Male	75.0	74.5	77.8	77.5	76.7	77.4	75.7	74.1	74.4	71.4	69.8	69.0	69.9	68.0	65.1	61.3	58.4	55.8	54.9 54.2	— 55.5	— 55.7	— 54.8	— 56.2	— +1.4
Female	62.2	61.8	65.0	67.1	67.0	66.8	65.7	65.4	64.3	62.8	62.1	61.9	63.1	59.9	54.9	52.3	49.0	46.8	46.7 43.4	— 45.2	— 47.0	— 46.9	— 48.9	— +2.0
College Plans:																								
None or under 4 yrs.	—	69.9	72.8	72.7	72.2	73.5	72.1	71.6	70.5	69.0	67.9	66.6	68.6	65.0	61.6	58.7	57.1	54.9	53.6 52.4	— 53.6	— 55.9	— 54.8	— 56.1	— +1.3
Complete 4 yrs.	—	66.5	69.4	71.6	71.4	70.8	70.0	68.6	68.1	65.7	64.6	64.8	65.7	63.6	59.1	56.4	52.7	50.0	49.6 47.4	— 48.9	— 49.6	— 49.3	— 51.4	— +2.1
Region:																								
Northeast	76.9	75.7	76.6	78.0	81.1	79.4	80.4	76.7	74.4	73.6	72.3	67.6	69.1	66.7	61.7	65.3	59.6	51.5	55.2 56.1	— 53.1	— 55.0	— 56.5	— 56.7	— +0.2
North Central	71.1	73.2	76.4	77.2	73.9	75.1	73.6	75.0	74.4	70.6	66.8	71.3	70.7	67.9	65.9	61.5	59.7	58.0	54.6 51.6	— 53.8	— 55.3	— 51.5	— 51.5	— 0.0
South	62.8	60.2	64.7	67.0	65.7	65.5	62.9	61.3	64.3	62.1	60.0	58.2	60.7	58.6	55.1	51.0	49.1	48.1	50.1 47.7	— 49.2	— 50.6	— 51.1	— 51.1	— 0.0
West	60.0	62.2	64.4	63.1	65.5	67.6	65.3	63.8	62.9	63.6	66.2	64.5	66.7	65.0	59.3	51.6	49.7	46.7	43.8 39.8	— 44.2	— 43.2	— 42.1	— 52.7	— +10.6sss
Population Density:																								
Large MSA	75.3	72.6	74.0	75.5	77.3	78.0	75.5	72.9	69.2	66.6	67.4	66.2	66.3	63.8	56.9	59.2	52.9	49.0	52.3 50.6	— 49.5	— 50.6	— 51.6	— 51.1	— -0.5
Other MSA	68.5	67.0	72.0	72.7	72.0	70.8	69.1	69.3	69.8	66.2	65.1	64.8	66.9	64.1	60.7	57.4	55.7	50.8	49.8 47.1	— 49.2	— 50.6	— 50.1	— 53.4	— +3.3s
Non-MSA	63.2	66.5	67.8	68.4	67.3	69.0	68.9	67.6	69.0	69.0	65.9	65.2	65.5	63.8	61.7	54.4	52.0	54.1	51.9 49.8	— 52.5	— 53.4	— 51.4	— 52.9	— +1.5
Parental Education:[b]																								
1.0-2.0 (Low)	58.7	62.5	62.0	62.7	64.6	65.9	62.1	61.3	61.2	58.1	58.7	56.1	56.3	54.5	47.8	47.2	49.9	45.6	43.3 36.6	— 43.5	— 45.9	— 41.2	— 43.8	— +2.6
2.5-3.0	70.0	71.4	72.5	71.9	71.1	72.0	70.7	69.4	69.2	67.4	65.9	65.3	67.0	64.6	59.7	57.2	53.3	52.3	50.5 49.0	— 49.9	— 52.0	— 48.2	— 51.0	— +2.8
3.5-4.0	69.2	67.9	73.5	75.0	74.6	73.3	71.5	72.7	70.4	69.6	66.9	66.7	67.2	64.3	62.9	57.7	54.3	51.2	53.5 51.2	— 50.1	— 50.6	— 51.4	— 52.1	— +0.7
4.5-5.0	69.6	71.3	74.5	77.0	76.0	74.4	73.1	74.5	73.1	69.3	68.9	68.0	68.8	66.0	62.1	60.8	54.8	51.0	50.7 49.8	— 52.6	— 51.8	— 53.6	— 55.3	— +1.7
5.5-6.0 (High)	67.3	72.5	77.1	79.2	75.9	77.2	77.4	74.1	75.0	70.3	67.9	69.9	70.5	67.3	62.2	60.8	58.0	55.7	53.3 53.2	— 52.2	— 55.1	— 54.2	— 57.4	— +3.2
Race (2-year average):[c]																								
White	—	—	72.8	75.0	75.3	75.4	75.4	74.6	73.9	72.8	71.2	70.2	71.0	70.6	67.3	63.8	60.0	56.8	55.6 —	— 54.0	— 54.5	— 54.8	— 56.4	— +1.6
Black	—	—	49.5	48.7	47.2	47.6	46.7	46.0	47.7	45.5	42.8	42.1	39.4	39.8	39.5	35.8	33.7	31.7	32.4 —	— 33.8	— 35.2	— 36.5	— 34.3	— -2.2
Hispanic	—	—	63.0	64.5	63.8	63.6	62.0	60.3	59.1	59.7	58.1	56.3	57.2	57.8	52.9	49.1	51.5	53.8	50.5 —	— 45.9	— 48.7	— 47.5	— 48.2	— +0.7

NOTES: Level of significance of difference between the two most recent classes: s = .05, ss = .01, sss = .001. '—' indicates data not available. See Table D-40 for the number of subgroup cases. See Appendix B for definition of variables in table.

SOURCE: The Monitoring the Future Study, the University of Michigan.

[a] In 1993, the question text was changed slightly in three of six forms to indicate that a "drink" meant "more than a few sips." The data in the upper line for each subgroup came from forms using the original wording, while the data in the lower line came from forms using the revised wording. Beginning in 1994, data based on all six forms.

[b] Parental education is an average score of mother's education and father's education. See Appendix B for details.

[c] To derive percentages for each racial subgroup, data for the specified year *and* the previous year have been combined to increase subgroup sample sizes and thus provide more stable estimates.

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TABLE D-25
Been Drunk: Trends in Thirty-Day Prevalence by Subgroups for Eighth and Tenth Graders

	Percent who had been drunk in last thirty days															
	8th Grade								10th Grade							
	1991	1992	1993	1994	1995	1996	1997	'96–'97 change	1991	1992	1993	1994	1995	1996	1997	'96–'97 change
Approx. N =	17500	18600	18300	17300	17500	17800	18600		14800	14800	15300	15800	17000	15600	15500	
Total	7.6	7.5	7.8	8.7	8.3	9.6	8.2	-1.4s	20.5	18.1	19.8	20.3	20.8	21.3	22.4	+1.1
Sex:																
Male	8.4	7.4	7.8	9.0	8.2	9.7	8.4	-1.3	22.3	18.6	21.4	23.2	21.9	23.0	24.6	+1.6
Female	7.0	7.6	7.8	8.3	8.2	9.5	7.9	-1.6s	18.7	17.5	18.1	17.2	19.6	19.8	20.2	+0.4
College Plans:																
None or under 4 yrs.	15.8	17.2	18.4	20.0	17.2	19.3	18.7	-0.6	29.5	26.3	29.0	31.1	31.4	32.0	35.5	+3.5
Complete 4 yrs.	6.4	6.1	6.4	7.3	7.3	8.2	7.1	-1.1s	18.6	16.4	17.9	18.0	19.0	19.7	20.3	+0.6
Region:																
Northeast	5.7	6.4	6.2	8.2	8.2	9.7	7.9	-1.8	23.9	18.8	20.0	19.0	19.5	22.4	21.9	-0.5
North Central	7.7	7.6	7.3	8.3	8.3	10.2	8.2	-2.0	21.8	18.9	20.1	21.0	22.6	22.0	23.3	+1.3
South	8.8	8.2	8.3	8.8	8.4	9.1	8.3	-0.8	19.2	16.8	19.8	20.9	20.9	21.4	22.0	+0.6
West	7.3	6.9	9.4	9.6	8.2	9.8	8.3	-1.5	18.2	18.3	19.0	19.5	19.5	19.3	22.6	+3.3
Population Density:																
Large MSA	7.4	7.0	6.0	7.6	7.2	8.9	6.7	-2.2s	20.6	17.6	17.6	16.1	18.2	19.6	20.7	+1.1
Other MSA	7.3	7.4	8.4	9.7	8.9	9.9	8.6	-1.3	20.1	17.3	18.2	21.7	21.8	21.9	21.8	-0.1
Non-MSA	8.4	8.2	8.8	7.9	8.6	10.0	9.2	-0.8	21.1	19.9	24.7	21.8	21.8	22.4	25.5	+3.1
Parental Education:[a]																
1.0-2.0 (Low)	13.4	11.0	10.4	12.5	13.1	11.1	11.5	+0.4	20.9	18.2	22.2	20.0	23.4	22.1	19.7	-2.4
2.5-3.0	9.2	8.8	9.2	9.3	9.6	11.9	9.3	-2.6ss	22.5	18.5	21.4	21.2	22.9	23.4	22.5	-0.9
3.5-4.0	6.9	7.6	8.5	9.3	9.4	10.4	10.2	-0.2	20.4	19.4	19.4	22.1	21.4	22.1	24.1	+2.0
4.5-5.0	6.1	6.5	5.9	7.5	6.4	8.7	6.7	-2.0s	19.7	17.1	18.2	18.7	19.7	19.5	22.3	+2.8s
5.5-6.0 (High)	6.8	4.9	6.7	7.6	6.0	7.1	5.8	-1.3	20.6	18.5	18.6	17.9	17.9	22.3	22.4	+0.1
Race (2-year average):[b]																
White	—	7.7	7.8	8.4	8.9	9.7	9.7	0.0	—	21.6	20.8	22.0	22.7	23.7	25.0	+1.3
Black	—	5.4	5.1	5.6	5.6	5.5	4.6	-0.9	—	9.4	10.3	10.1	9.8	8.5	8.6	+0.1
Hispanic	—	9.9	9.9	10.8	10.8	10.8	10.4	-0.4	—	16.2	15.9	17.0	18.6	20.1	19.5	-0.6

NOTES: Level of significance of difference between the two most recent classes: s = .05, ss = .01, sss = .001.
'—' indicates data not available.
See Table D-39 for the number of subgroup cases.
See Appendix B for definition of variables in table.

SOURCE: The Monitoring the Future Study, the University of Michigan.

[a] Parental education is an average score of mother's education and father's education. See Appendix B for details.

[b] To derive percentages for each racial subgroup, data for the specified year *and* the previous year have been combined to increase subgroup sample sizes and thus provide more stable estimates.

TABLE D-26
Been Drunk: Trends in Thirty-Day Prevalence by Subgroups for Twelfth Graders

	Percent who had been drunk in last thirty days																						
	Class of 1975	Class of 1976	Class of 1977	Class of 1978	Class of 1979	Class of 1980	Class of 1981	Class of 1982	Class of 1983	Class of 1984	Class of 1985	Class of 1986	Class of 1987	Class of 1988	Class of 1989	Class of 1990	Class of 1991	Class of 1992	Class of 1993	Class of 1994	Class of 1995	Class of 1996	Class of 1997	'96–'97 change
Approx. N =	9400	15400	17100	17800	15500	15900	17500	17700	16300	15900	16000	15200	16300	16300	16700	15200	15000	15800	16300	15400	15400	14300	15400	
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	31.6	29.9	28.9	30.8	33.2	31.3	34.2	+2.9
Sex:																								
Male	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	37.1	35.2	34.5	34.5	37.8	35.4	39.2	+3.8
Female	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	25.4	24.5	23.5	26.8	28.8	27.3	29.1	+1.8
College Plans:																								
None or under 4 yrs	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	32.2	31.4	32.6	32.2	37.6	31.4	38.1	+6.7s
Complete 4 yrs.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	30.9	29.2	27.4	29.4	31.4	31.0	32.3	+1.3
Region:																								
Northeast	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	36.4	30.0	35.0	35.2	35.5	37.2	35.9	-1.3
North Central	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	37.2	38.2	32.5	34.1	38.2	31.5	33.7	+2.2
South	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	26.5	25.2	26.4	29.1	31.2	31.0	34.5	+3.5
West	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	28.5	26.6	23.2	25.4	27.1	24.7	32.7	+8.0
Population Density:																								
Large MSA	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	30.4	26.1	29.4	28.7	32.0	31.5	31.5	0.0
Other MSA	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	33.5	29.8	26.9	29.9	31.7	33.0	33.7	+0.7
Non-MSA	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	29.4	33.7	32.0	34.4	36.9	28.2	38.2	+10.0ss
Parental Education:[a]																								
1.0-2.0 (Low)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	20.4	20.5	23.6	25.7	25.4	18.8	23.7	+4.9
2.5-3.0	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	30.2	30.0	26.4	30.3	30.0	27.4	31.5	+4.1
3.5-4.0	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	31.0	31.3	29.2	29.9	34.4	31.1	32.7	+1.6
4.5-5.0	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	34.4	29.4	32.8	33.5	36.5	35.8	37.7	+1.9
5.5-6.0 (High)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	40.5	34.3	30.4	30.7	34.9	34.6	39.8	+5.2
Race (2-year average):[b]																								
White	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	34.7	33.6	34.0	36.4	36.6	37.7	+1.1
Black	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	11.0	12.5	14.1	13.2	13.0	13.8	+0.8
Hispanic	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	27.2	24.8	23.0	24.2	26.2	26.9	+0.7

NOTES: Level of significance of difference between the two most recent classes: s = .05, ss = .01, sss = .001. '—' indicates data not available.
See Table D-40 for the number of subgroup cases.
See Appendix B for definition of variables in table.
Data based on two of six forms; N is two-sixths of N indicated.

SOURCE: The Monitoring the Future Study, the University of Michigan.

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[a] Parental education is an average score of mother's education and father's education. See Appendix B for details.

[b] To derive percentages for each racial subgroup, data for the specified year *and* the previous year have been combined to increase subgroup sample sizes and thus provide more stable estimates.

TABLE D-27
Alcohol: Trends in Two-week Prevalence of Five or More Drinks in a Row by Subgroups for Eighth and Tenth Graders

Percent reporting 5+ drinks in a row on one or more occasions

	8th Grade								10th Grade							
	1991	1992	1993	1994	1995	1996	1997	'96–'97 change	1991	1992	1993	1994	1995	1996	1997	'96–'97 change
Approx. N =	17500	18600	18300	17300	17500	17800	18600		14800	14800	15300	15800	17000	15600	15500	
Total	12.9	13.4	13.5	14.5	14.5	15.6	14.5	-1.1	22.9	21.1	23.0	23.6	24.0	24.8	25.1	+0.3
Sex:																
Male	14.3	13.9	14.8	16.0	15.1	16.5	15.3	-1.2	26.4	23.7	26.5	28.5	26.3	27.2	28.6	+1.4
Female	11.4	12.8	12.3	13.0	13.9	14.5	13.5	-1.0	19.5	18.6	19.3	18.7	21.5	22.3	21.7	-0.6
College Plans:																
None or under 4 yrs.	24.4	26.4	29.3	29.3	29.2	29.9	30.3	+0.4	33.0	31.8	35.1	36.4	37.5	38.2	39.4	+1.2
Complete 4 yrs.	11.1	11.5	11.3	12.5	12.7	13.3	12.5	-0.8	20.8	18.9	20.5	20.8	21.5	22.5	22.7	+0.2
Region:																
Northeast	10.3	10.7	10.0	12.6	12.6	15.1	13.0	-2.1	25.1	19.9	23.2	21.3	22.1	23.8	23.4	-0.4
North Central	13.4	14.2	12.8	13.7	14.2	16.0	14.2	-1.8	23.7	21.3	23.5	24.8	25.3	25.3	24.0	-1.3
South	14.1	14.8	15.5	14.9	15.7	15.8	15.3	-0.5	22.7	21.5	22.6	24.6	24.5	25.6	25.6	0.0
West	12.3	12.8	15.0	16.5	14.4	15.3	14.6	-0.7	20.7	21.7	22.5	22.5	23.1	23.6	27.9	+4.3
Population Density:																
Large MSA	12.4	12.5	10.6	12.3	12.3	14.5	13.7	-0.8	21.6	19.3	20.9	19.0	20.2	22.2	22.5	+0.3
Other MSA	12.4	14.0	14.5	15.7	14.2	15.7	14.0	-1.7	22.1	20.0	21.2	24.4	24.1	24.9	24.8	-0.1
Non-MSA	14.4	13.5	15.5	14.4	17.8	16.9	16.4	-0.5	25.5	25.2	28.1	26.8	28.1	27.6	28.9	+1.3
Parental Education:[a]																
1.0-2.0 (Low)	21.8	21.8	19.7	20.4	23.2	20.1	22.5	+2.4	25.7	25.6	26.8	25.5	30.5	27.2	25.5	-1.7
2.5-3.0	15.1	16.0	15.6	17.1	17.8	18.4	16.2	-2.2	26.0	22.4	25.7	25.7	26.7	27.8	26.1	-1.7
3.5-4.0	12.8	13.0	13.9	14.8	15.0	15.9	15.8	-0.1	21.7	21.3	22.8	24.7	24.6	25.4	26.5	+1.1
4.5-5.0	10.2	10.3	10.3	11.8	11.0	13.1	11.7	-1.4	20.8	19.7	19.9	21.7	21.6	22.0	23.1	+1.1
5.5-6.0 (High)	9.8	9.5	10.1	11.2	10.5	12.1	10.6	-1.5	22.4	19.5	20.4	19.3	19.0	24.0	24.0	0.0
Race (2-year average):[b]																
White	—	12.7	12.6	12.9	13.9	15.1	15.1	0.0	—	23.2	23.0	24.5	25.4	26.2	26.9	+0.7
Black	—	9.6	10.7	11.8	10.8	10.4	9.8	-0.6	—	15.0	14.8	14.0	13.3	12.2	12.7	+0.5
Hispanic	—	20.4	21.4	22.3	22.0	21.0	20.7	-0.3	—	22.9	23.8	24.2	26.8	29.6	27.5	-2.1

NOTES: Level of significance of difference between the two most recent classes: s = .05, ss = .01, sss = .001.
'—' indicates data not available.
See Table D-39 for the number of subgroup cases.
See Appendix B for definition of variables in table.

SOURCE: The Monitoring the Future Study, the University of Michigan.

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[a] Parental education is an average score of mother's education and father's education. See Appendix B for details.

[b] To derive percentages for each racial subgroup, data for the specified year *and* the previous year have been combined to increase subgroup sample sizes and thus provide more stable estimates.

TABLE D-28
Alcohol: Trends in Two-week Prevalence of Five or More Drinks in a Row by Subgroups for Twelfth Graders

	Percent reporting 5+ drinks in a row on one or more occasions																							
	Class of 1975	Class of 1976	Class of 1977	Class of 1978	Class of 1979	Class of 1980	Class of 1981	Class of 1982	Class of 1983	Class of 1984	Class of 1985	Class of 1986	Class of 1987	Class of 1988	Class of 1989	Class of 1990	Class of 1991	Class of 1992	Class of 1993	Class of 1994	Class of 1995	Class of 1996	Class of 1997	'96–'97 change
Approx. N =	9400	15400	17100	17800	15500	15900	17500	17700	16300	15900	16000	15200	16300	16300	16700	15200	15000	15800	16300	15400	15400	14300	15400	
Total	36.8	37.1	39.4	40.3	41.2	41.2	41.4	40.5	40.8	38.7	36.7	36.8	37.5	34.7	33.0	32.2	29.8	27.9	27.5	28.2	29.8	30.2	31.3	+1.1
Sex:																								
Male	49.0	47.9	50.0	51.4	51.9	52.1	51.6	49.8	50.4	47.5	45.3	46.1	46.1	43.0	41.2	39.1	37.8	35.6	34.6	37.0	36.9	37.0	37.9	+0.9
Female	26.4	25.9	29.3	29.6	30.9	30.5	30.8	31.1	31.0	29.6	28.2	28.1	29.2	26.5	24.9	24.4	21.2	20.3	20.7	20.2	23.0	23.5	24.4	+0.9
College Plans:																								
None or under 4 yrs	—	41.8	44.7	44.3	44.5	46.3	46.7	45.7	44.9	43.5	41.6	41.3	42.7	38.5	38.2	35.8	34.4	32.8	32.7	34.0	35.2	33.9	36.2	+2.3
Complete 4 yrs	—	31.5	33.9	35.9	37.7	36.9	37.4	36.5	37.2	34.6	33.0	34.1	35.0	32.8	30.5	30.3	27.9	26.0	25.8	26.3	27.8	28.8	29.5	+0.7
Region:																								
Northeast	43.0	40.8	40.0	43.5	47.4	48.0	49.3	43.3	42.2	42.9	42.4	37.1	37.2	34.3	33.3	37.2	33.4	25.8	30.3	29.2	31.2	33.7	33.5	-0.2
North Central	40.6	42.8	44.5	45.3	44.8	45.4	44.9	47.9	47.2	44.3	39.7	42.6	43.5	39.9	40.4	37.9	34.6	34.6	30.1	31.9	34.3	31.5	31.6	+0.1
South	32.1	30.8	36.3	36.4	36.7	34.4	34.7	34.6	37.6	33.5	29.7	31.7	33.4	30.4	28.5	27.2	26.3	24.7	27.1	26.9	28.6	30.2	30.6	+0.4
West	29.0	32.8	34.2	33.3	34.0	36.0	35.6	32.5	33.3	34.5	36.1	35.9	36.6	35.4	30.8	26.3	26.3	26.0	22.0	24.5	24.2	24.0	29.6	+5.6s
Population Density																								
Large MSA	37.9	37.0	38.1	39.5	42.2	44.8	43.4	40.9	38.8	37.9	37.6	36.4	34.8	32.5	28.8	34.5	28.6	25.5	27.6	26.8	28.3	29.8	29.9	+0.1
Other MSA	36.1	36.8	39.5	40.1	40.8	38.9	39.5	39.7	41.0	37.3	35.4	35.5	38.6	35.3	33.7	31.8	30.1	27.0	26.5	27.1	28.4	30.3	31.1	+0.8
Non-MSA	36.9	38.0	40.5	41.3	40.9	41.4	42.2	41.3	42.0	41.2	37.6	39.1	38.3	35.9	35.8	30.6	30.4	31.9	29.2	31.5	34.0	30.5	33.2	+2.7
Parental Education[a]																								
1.0-2.0 (Low)	31.6	34.1	35.6	36.3	36.0	37.0	37.0	35.3	37.2	34.8	31.8	31.7	33.9	30.7	25.4	25.3	26.8	23.4	21.9	24.0	26.6	24.8	22.6	-2.2
2.5-3.0	37.5	41.1	41.8	40.9	42.3	43.3	43.2	41.4	41.2	39.8	38.2	37.9	38.9	35.7	34.0	32.7	29.9	28.1	27.6	28.5	31.2	28.6	30.4	+1.8
3.5-4.0	35.1	36.4	39.5	41.3	41.4	42.1	42.4	42.4	40.9	39.3	36.9	37.9	38.3	34.7	34.3	32.0	30.4	27.9	28.4	28.4	29.5	29.8	31.0	+1.2
4.5-5.0	34.4	36.9	37.2	42.4	43.8	40.8	40.8	41.9	41.9	38.6	37.1	37.1	37.2	35.1	34.2	34.5	29.9	28.1	28.4	29.3	29.9	32.4	32.4	0.0
5.5-6.0 (High)	29.9	34.5	41.1	37.2	41.9	38.5	39.3	40.9	42.1	38.2	34.9	36.7	37.2	34.7	31.8	34.1	30.6	30.4	29.0	29.0	30.7	33.1	34.9	+1.8
Race (2-year average)[b]																								
White	—	—	40.5	42.4	43.5	44.3	44.9	44.9	44.5	43.6	41.5	40.3	40.9	40.0	37.9	36.6	34.6	32.1	31.3	31.5	32.3	33.4	35.1	+1.7
Black	—	—	19.0	19.3	18.9	17.7	17.1	17.1	18.3	17.2	15.7	16.4	15.8	15.2	15.7	14.4	11.7	11.3	12.6	14.4	14.9	15.3	13.4	-1.9
Hispanic	—	—	36.4	37.2	33.6	33.1	34.8	32.9	32.5	33.0	31.7	30.8	33.0	33.7	28.8	25.6	27.9	31.1	27.2	24.3	26.6	27.1	27.6	+0.5

NOTES: Level of significance of difference between the two most recent classes: s = .05, ss = .01, sss = .001. '—' indicates data not available.
See Table D-40 for the number of subgroup cases.
See Appendix B for definition of variables in table.

SOURCE: The Monitoring the Future Study, the University of Michigan.

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[a] Parental education is an average score of mother's education and father's education. See Appendix B for details.

[b] To derive percentages for each racial subgroup, data for the specified year *and* the previous year have been combined to increase subgroup sample sizes and thus provide more stable estimates.

TABLE D-29
Cigarettes: Trends in Thirty-Day Prevalence of Use by Subgroups for Eighth and Tenth Graders

	Percent who used in last thirty days															
	8th Grade								10th Grade							
	1991	1992	1993	1994	1995	1996	1997	'96–'97 change	1991	1992	1993	1994	1995	1996	1997	'96–'97 change
Approx N =	17500	18600	18300	17300	17500	17800	18600		14800	14800	15300	15800	17000	15600	15500	
Total	14.3	15.5	16.7	18.6	19.1	21.0	19.4	-1.6	20.8	21.5	24.7	25.4	27.9	30.4	29.8	-0.6
Sex:																
Male	15.5	14.9	17.2	19.3	18.8	20.6	19.1	-1.5	20.8	20.6	24.6	26.6	27.7	30.1	28.2	-1.9
Female	13.1	15.9	16.3	17.9	19.0	21.1	19.5	-1.6	20.7	22.2	24.5	23.9	27.9	30.8	31.1	+0.3
College Plans:																
None or under 4 yrs	29.2	31.9	34.1	36.6	36.5	39.2	40.0	+0.8	36.5	35.0	41.9	42.2	46.3	46.2	47.2	+1.0
Complete 4 yrs	11.8	13.1	14.3	16.1	16.8	18.2	16.9	-1.3	17.3	18.6	21.0	21.7	24.7	27.8	26.8	-1.0
Region:																
Northeast	13.7	14.4	15.0	17.8	18.6	22.1	18.0	-4.1s	22.4	21.9	27.1	24.5	27.8	31.7	29.3	-2.4
North Central	15.5	16.5	16.3	18.5	20.9	23.2	20.0	-3.2	22.9	24.3	26.0	28.8	30.1	32.5	31.7	-0.8
South	15.7	17.0	18.2	19.5	19.4	21.1	21.0	-0.1	21.2	19.8	24.0	25.7	30.8	33.4	32.2	-1.2
West	10.0	12.2	16.4	18.0	16.5	17.1	17.1	0.0	16.7	20.2	21.2	20.1	19.6	20.8	23.2	+2.4
Population Density:																
Large MSA	12.8	15.0	14.1	15.5	16.5	19.4	15.8	-3.6s	19.7	21.6	22.5	22.3	23.3	26.2	26.6	+0.4
Other MSA	14.9	15.3	17.8	20.7	19.4	21.4	19.7	-1.7	20.3	20.3	23.8	26.3	28.9	31.1	28.9	-2.2
Non-MSA	14.8	16.4	17.9	17.8	21.5	22.1	22.8	+0.7	22.7	23.7	28.2	26.7	31.3	33.9	34.9	+1.0
Parental Education:[a]																
1.0-2.0 (Low)	26.2	24.1	23.3	26.1	25.3	26.5	26.9	+0.4	23.5	28.4	29.5	26.4	30.9	28.7	28.2	-0.5
2.5-3.0	16.4	16.9	19.8	20.6	22.7	24.4	22.4	-2.0	24.1	23.3	28.0	29.1	33.2	33.8	33.2	-0.6
3.5-4.0	13.9	14.9	17.4	20.1	20.8	21.4	20.9	-0.5	20.4	20.6	24.8	26.0	27.8	31.6	30.9	-0.7
4.5-5.0	10.1	13.3	12.5	14.9	14.9	18.4	16.2	-2.2	18.5	19.5	20.1	22.6	25.9	28.7	28.5	-0.2
5.5-6.0 (High)	11.3	11.5	13.3	15.1	14.5	17.3	15.3	-2.0	18.5	18.9	21.4	20.7	21.8	27.8	24.6	-3.2
Race (2-year average):[b]																
White	—	16.2	17.8	18.9	20.7	22.7	22.8	+0.1	—	24.1	26.0	27.8	29.7	32.9	34.4	+1.5
Black	—	5.3	6.6	8.7	8.9	9.6	10.9	+1.3	—	6.6	7.5	9.8	11.5	12.2	12.8	+0.6
Hispanic	—	16.7	18.3	21.3	21.6	19.6	19.1	-0.5	—	18.3	20.5	19.4	21.4	23.7	23.0	-0.7

NOTES: Level of significance of difference between the two most recent classes: s = .05, ss = .01, sss = .001.
'—' indicates data not available.
See Table D-39 for the number of subgroup cases.
See Appendix B for definition of variables in table.

SOURCE: The Monitoring the Future Study, the University of Michigan.

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[a] Parental education is an average score of mother's education and father's education. See Appendix B for details.

[b] To derive percentages for each racial subgroup, data for the specified year *and* the previous year have been combined to increase subgroup sample sizes and thus provide more stable estimates.

TABLE D-30
Cigarettes: Trends in Thirty-Day Prevalence of Use by Subgroups for Twelfth Graders

	Percent who used in last thirty days																							
	Class of 1975	Class of 1976	Class of 1977	Class of 1978	Class of 1979	Class of 1980	Class of 1981	Class of 1982	Class of 1983	Class of 1984	Class of 1985	Class of 1986	Class of 1987	Class of 1988	Class of 1989	Class of 1990	Class of 1991	Class of 1992	Class of 1993	Class of 1994	Class of 1995	Class of 1996	Class of 1997	'96-'97 change
Approx. N =	9400	15400	17100	17800	15500	15900	17500	17700	16300	15900	16000	15200	16300	16300	16700	15200	15000	15800	16300	15400	15400	14300	15400	
Total	36.7	38.8	38.4	36.7	34.4	30.5	29.4	30.0	30.3	29.3	30.1	29.6	29.4	28.7	28.6	29.4	28.3	27.8	29.9	31.2	33.5	34.0	36.5	+2.5s
Sex:																								
Male	37.2	37.7	36.6	34.5	31.2	26.8	26.5	26.8	28.0	25.9	28.2	27.9	27.0	28.0	27.7	29.1	29.0	29.2	30.7	32.9	34.5	34.9	37.3	+2.4
Female	35.9	39.1	39.6	38.1	37.1	33.4	31.6	32.6	31.6	31.9	31.4	30.6	31.4	28.9	29.0	29.2	27.5	26.1	28.7	29.2	32.0	32.4	35.2	+2.8
College Plans:																								
None or under 4 yrs		46.3	46.2	44.6	43.0	39.6	38.1	38.7	38.0	37.9	40.5	38.5	39.7	37.5	38.0	37.5	38.1	38.6	37.3	40.9	43.5	45.0	45.7	+0.7
Complete 4 yrs	---	29.8	29.4	27.4	26.0	22.3	22.3	22.1	23.3	22.7	22.8	24.0	24.3	24.4	24.1	25.4	24.2	23.8	27.3	28.0	29.9	30.8	33.1	+2.3s
Region:																								
Northeast	40.1	41.8	43.0	40.6	37.0	34.1	31.5	32.1	34.6	33.5	34.2	35.2	34.1	31.2	29.4	31.9	30.5	29.6	34.2	33.2	34.4	38.5	40.6	+2.1
North Central	39.5	41.3	40.5	39.0	36.6	31.5	32.4	33.5	33.2	31.4	34.1	32.5	31.7	31.1	34.9	34.0	34.6	31.7	33.2	36.2	37.8	37.7	39.3	+1.6
South	36.2	39.1	37.6	35.7	35.4	31.8	28.9	29.4	28.7	28.6	25.6	26.1	26.0	28.0	26.4	26.1	25.4	26.4	29.0	30.7	33.5	33.2	35.0	+1.8
West	26.3	28.3	27.7	27.3	24.8	21.2	21.8	20.4	21.8	22.9	26.3	23.3	26.6	23.9	22.7	25.1	23.2	22.8	22.9	24.0	26.5	24.4	30.5	+6.1s
Population Density:																								
Large MSA	39.7	40.4	40.9	37.5	33.4	31.2	30.6	32.1	30.8	31.3	31.9	30.8	29.3	26.9	25.9	27.9	26.2	25.6	29.5	29.0	33.9	32.1	34.9	+2.8
Other MSA	35.1	35.9	36.1	34.3	33.5	29.7	27.4	27.8	29.1	28.2	28.5	28.0	28.2	28.3	28.2	29.6	29.3	26.9	29.8	31.1	31.7	32.6	35.7	+3.1s
Non-MSA	36.7	40.9	39.2	39.4	36.4	30.9	30.9	31.2	31.5	29.3	30.8	31.0	31.8	31.4	32.2	30.4	28.6	31.5	30.3	33.8	36.2	38.2	40.0	+1.8
Parental Education:[a]																								
1.0-2.0 (Low)	37.2	43.2	39.6	38.1	38.1	32.7	32.5	32.6	32.7	33.6	32.3	28.6	28.8	28.1	25.4	26.3	31.3	27.1	26.5	26.2	31.2	31.5	31.2	-0.3
2.5-3.0	37.0	41.2	40.8	39.3	35.9	34.2	31.7	32.0	32.2	31.8	32.3	32.3	31.4	29.9	30.8	30.8	28.7	30.3	30.4	32.8	35.0	35.5	36.5	+1.0
3.5-4.0	31.9	35.3	37.3	34.0	33.3	28.0	28.2	29.0	28.0	28.1	29.7	29.7	28.8	27.8	29.4	29.3	28.4	27.8	29.9	31.4	33.2	33.2	35.6	+2.4
4.5-5.0	32.3	35.0	33.0	32.6	30.1	25.7	26.0	25.5	27.8	25.2	27.7	26.4	27.6	28.6	27.0	29.1	26.9	25.8	30.1	32.0	32.6	34.5	37.5	+3.0
5.5-6.0 (High)	26.8	30.8	32.8	31.9	29.6	24.0	22.5	25.1	25.5	23.7	22.6	26.7	29.3	27.8	26.3	28.6	27.1	25.5	30.5	30.4	34.0	32.9	38.5	+5.6ss
Race (2-year average):[b]																								
White	—	—	38.3	37.6	36.0	33.0	30.5	30.7	31.3	31.2	31.3	31.9	32.1	32.2	32.2	32.3	32.2	31.8	33.2	35.2	36.6	38.1	40.7	+2.6s
Black	—	—	36.7	32.7	30.2	26.8	23.7	21.8	21.2	19.3	18.1	16.9	14.2	13.3	12.6	12.2	10.6	8.7	9.5	10.9	12.9	14.2	14.3	+0.1
Hispanic	—	—	35.7	32.8	26.8	22.6	23.2	24.7	24.7	25.3	25.5	23.7	22.7	21.9	20.6	21.7	24.0	25.0	24.2	23.6	25.1	25.4	25.9	+0.5

NOTES: Level of significance of difference between the two most recent classes: s = .05, ss = .01, sss = .001. '—' indicates data not available.
See Table D-40 for the number of subgroup cases.
See Appendix B for definition of variables in table.

SOURCE: The Monitoring the Future Study, the University of Michigan.

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[a] Parental education is an average score of mother's education and father's education. See Appendix B for details.

[b] To derive percentages for each racial subgroup, data for the specified year *and* the previous year have been combined to increase subgroup sample sizes and thus provide more stable estimates.

TABLE D-31

Cigarettes: Trends in Thirty-Day Prevalence of Daily Use by Subgroups for Eighth and Tenth Graders

	Percent who used daily in last thirty days															
	8th Grade								10th Grade							
	1991	1992	1993	1994	1995	1996	1997	'96–'97 change	1991	1992	1993	1994	1995	1996	1997	'96–'97 change
Approx. N =	17500	18600	18300	17300	17500	17800	18600		14800	14800	15300	15800	17000	15600	15500	
Total	7.2	7.0	8.3	8.8	9.3	10.4	9.0	-1.4s	12.6	12.3	14.2	14.6	16.3	18.3	18.0	-0.3
Sex:																
Male	8.1	6.9	8.8	9.5	9.2	10.5	9.0	-1.5s	12.4	12.1	13.8	15.2	16.3	18.1	17.2	-0.9
Female	6.2	7.2	7.8	8.0	9.2	10.1	8.7	-1.4	12.5	12.4	14.3	13.7	16.1	18.6	18.5	-0.1
College Plans:																
None or under 4 yrs	18.5	20.1	21.5	22.6	22.5	26.0	25.4	-0.6	25.7	25.5	28.9	28.9	32.7	34.3	35.4	+1.1
Complete 4 yrs	5.3	5.1	6.4	6.8	7.5	8.0	6.9	-1.1s	9.6	9.5	11.0	11.5	13.3	15.5	15.0	-0.5
Region:																
Northeast	7.2	7.1	7.1	8.6	9.2	11.0	8.8	-2.2	14.3	13.1	16.3	14.1	15.8	18.8	18.0	-0.8
North Central	7.8	7.6	8.5	9.4	11.0	12.4	10.3	-2.1	14.3	14.3	16.1	16.9	17.6	20.6	19.5	-1.1
South	7.9	7.8	9.3	9.4	9.4	10.4	9.5	-0.9	12.8	11.4	13.9	15.5	19.3	20.5	20.5	0.0
West	4.6	4.8	7.4	7.4	7.0	7.5	6.8	-0.7	9.1	10.7	10.9	9.7	9.4	10.7	11.1	+0.4
Population Density:																
Large MSA	6.3	6.3	5.7	6.6	7.6	9.5	7.0	-2.5s	12.3	11.7	12.3	12.0	12.6	15.3	15.7	+0.4
Other MSA	7.7	7.2	9.1	9.5	9.3	10.2	8.7	-1.5	11.7	11.6	13.6	15.5	17.5	18.8	16.9	-1.9
Non-MSA	7.3	7.8	10.1	9.6	11.1	11.8	11.7	-0.1	14.3	14.5	16.9	15.5	18.4	20.8	22.5	+1.7
Parental Education:[a]																
1.0-2.0 (Low)	15.9	11.9	12.7	13.0	15.8	13.6	14.3	+0.7	16.0	17.8	19.3	15.5	20.0	19.3	17.7	-1.6
2.5-3.0	8.6	8.4	9.7	11.3	11.3	14.0	11.7	-2.3s	15.5	13.9	16.9	17.6	21.6	23.1	22.1	-1.0
3.5-4.0	6.5	6.9	8.5	8.9	9.4	10.1	9.2	-0.9	12.0	11.8	13.6	15.9	17.0	19.4	18.9	-0.5
4.5-5.0	4.0	5.2	5.9	6.1	7.2	7.6	6.8	-0.8	10.6	10.5	10.7	11.5	12.6	14.8	15.6	+0.8
5.5-6.0 (High)	4.9	4.2	6.3	5.8	5.7	7.4	5.5	-1.9	9.6	9.0	10.5	9.6	10.3	13.6	12.0	-1.6
Race (2-year average):[b]																
White	—	7.7	8.8	9.7	10.5	11.7	11.4	-0.3	—	14.5	15.3	16.5	17.6	20.0	21.4	+1.4
Black	—	1.4	1.8	2.6	2.8	3.2	3.7	+0.5	—	2.8	3.1	3.8	4.7	5.1	5.6	+0.5
Hispanic	—	7.3	7.2	9.0	9.2	8.0	8.1	+0.1	—	8.4	8.9	8.1	9.9	11.6	10.8	-0.8

NOTES: Level of significance of difference between the two most recent classes: s = .05, ss = .01, sss = .001.
'—' indicates data not available.
See Table D-39 for the number of subgroup cases.
See Appendix B for definition of variables in table.

SOURCE: The Monitoring the Future Study, the University of Michigan.

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[a] Parental education is an average score of mother's education and father's education. See Appendix B for details.

[b] To derive percentages for each racial subgroup, data for the specified year *and* the previous year have been combined to increase subgroup sample sizes and thus provide more stable estimates.

TABLE D-32
Cigarettes: Trends in Thirty-Day Prevalence of Daily Use by Subgroups for Twelfth Graders

	Percent who used daily in last thirty days																							
	Class of 1975	Class of 1976	Class of 1977	Class of 1978	Class of 1979	Class of 1980	Class of 1981	Class of 1982	Class of 1983	Class of 1984	Class of 1985	Class of 1986	Class of 1987	Class of 1988	Class of 1989	Class of 1990	Class of 1991	Class of 1992	Class of 1993	Class of 1994	Class of 1995	Class of 1996	Class of 1997	'96–'97 change
Approx. N =	9400	15400	17100	17800	15500	15900	17500	17700	16300	15900	16000	15200	16300	16300	16700	15200	16000	15800	16300	15400	15400	14300	15400	
Total	26.9	28.8	28.8	27.5	25.4	21.3	20.3	21.1	21.2	18.7	19.5	18.7	18.7	18.1	18.9	19.1	18.5	17.2	19.0	19.4	21.6	22.2	24.6	+2.4s
Sex:																								
Male	26.9	28.0	27.1	26.0	22.3	18.5	18.1	18.2	19.2	16.0	17.8	16.9	16.4	17.4	17.9	18.6	18.8	17.2	19.4	20.4	21.7	22.2	24.8	+2.6s
Female	26.4	28.8	30.0	28.3	27.8	23.5	21.7	23.2	22.2	20.5	20.6	19.8	20.6	18.1	19.4	19.3	17.9	16.7	18.2	18.1	20.8	21.8	23.6	+1.8
College Plans:																								
None or under 4 yrs	—	36.5	37.2	35.2	33.8	29.7	29.3	29.5	29.3	27.2	29.6	28.2	29.0	27.4	27.9	28.3	28.4	28.1	27.8	29.8	33.7	33.2	35.6	+2.4
Complete 4 yrs		19.8	19.3	18.3	17.0	13.8	12.9	13.2	13.8	11.9	12.4	12.8	13.3	13.4	14.6	14.7	14.1	12.9	15.9	15.7	17.4	18.9	20.6	+1.7
Region:																								
Northeast	31.4	32.3	33.8	32.5	28.6	24.1	23.3	23.4	26.1	23.6	24.9	24.9	24.8	21.4	21.3	22.8	20.9	19.4	23.5	21.3	22.5	27.0	29.4	+2.4
North Central	28.6	30.2	29.4	28.6	27.0	22.0	23.0	24.0	23.4	20.4	22.4	19.9	20.3	19.0	23.0	22.2	23.0	19.0	21.3	23.8	25.7	26.1	28.0	+1.9
South	26.2	29.1	28.7	26.4	25.8	22.6	19.1	20.2	19.4	17.7	16.0	15.8	15.7	17.7	17.1	16.5	16.4	16.7	18.5	19.3	21.7	20.5	22.6	+2.1
West	17.3	19.4	19.2	19.1	17.0	14.0	13.1	12.7	13.0	12.4	14.2	13.4	14.9	14.0	13.8	14.8	13.9	13.3	13.0	12.4	14.5	13.8	17.5	+3.7
Population Density:																								
Large MSA	30.8	30.4	30.9	29.2	24.5	21.6	21.9	23.5	22.1	21.5	21.9	20.6	20.3	18.0	16.7	19.0	16.7	16.6	17.3	17.7	21.3	20.7	23.7	+3.0
Other MSA	25.6	27.1	27.2	25.7	25.0	21.3	19.0	19.3	20.2	17.4	17.7	17.0	17.6	17.7	19.0	19.0	19.0	15.9	19.7	19.2	19.9	21.9	23.9	+2.0
Non-MSA	25.8	29.5	29.1	28.7	26.5	21.2	20.7	21.3	21.7	18.2	19.9	19.8	19.3	18.8	20.9	19.5	19.0	20.3	19.2	21.6	24.8	24.1	26.8	+2.7
Parental Education:[a]																								
1.0-2.0 (Low)	27.2	32.7	29.6	28.6	29.1	23.7	24.1	24.6	24.0	23.2	22.7	20.4	19.7	19.2	17.1	16.7	21.2	16.5	17.6	16.9	21.3	21.1	21.9	+0.8
2.5-3.0	27.2	31.3	31.5	30.3	26.5	24.7	22.5	23.1	23.2	21.5	21.8	21.4	21.1	19.6	21.5	21.0	19.8	20.4	20.2	22.4	24.6	24.4	26.0	+1.6
3.5-4.0	22.1	25.8	28.1	24.8	24.5	19.4	19.0	19.7	18.8	16.4	19.3	19.4	17.8	17.5	19.0	19.3	18.5	16.9	18.9	18.9	21.6	21.2	23.8	+2.6
4.5-5.0	22.9	24.5	23.7	23.2	21.2	16.6	16.1	16.8	17.5	14.1	16.0	13.9	16.5	16.5	17.2	18.3	16.2	15.0	18.9	18.7	19.7	22.4	24.9	+2.5
5.5-6.0 (High)	17.4	22.8	21.7	22.8	20.6	15.0	13.9	14.5	17.2	14.1	11.2	13.6	16.6	15.1	15.8	16.5	16.1	12.8	16.6	17.3	18.5	20.0	22.9	+2.9
Race (2-year average):[b]																								
White	—	—	28.9	28.3	26.9	23.9	21.4	21.6	22.1	21.0	20.4	20.6	20.5	20.6	21.1	21.8	21.5	20.5	21.4	22.9	23.9	25.4	27.8	+2.4s
Black	—	—	24.9	22.7	20.9	17.4	14.6	13.1	12.5	10.7	9.9	9.4	7.9	7.3	6.4	5.8	5.1	4.2	4.1	4.9	6.1	7.0	7.2	+0.2
Hispanic	—	—	22.6	20.4	15.8	12.8	13.6	14.3	14.9	13.9	11.8	11.3	11.0	10.9	10.8	10.9	11.5	12.5	11.8	10.6	11.6	12.9	14.0	+1.1

NOTES: Level of significance of difference between the two most recent classes: s = .05, ss = .01, sss = .001. '—' indicates data not available.
See Table D-40 for the number of subgroup cases.
See Appendix B for definition of variables in table.

SOURCE: The Monitoring the Future Study, the University of Michigan.

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[a] Parental education is an average score of mother's education and father's education. See Appendix B for details.

[b] To derive percentages for each racial subgroup, data for the specified year *and* the previous year have been combined to increase subgroup sample sizes and thus provide more stable estimates.

TABLE D-33
Smokeless Tobacco: Trends in Thirty-Day Prevalence of Use by Subgroups for Eighth and Tenth Graders

	Percent who used in last thirty days															
	8th Grade								10th Grade							
	1991	1992	1993	1994	1996	1996	1997	'96–'97 change	1991	1992	1993	1994	1995	1996	1997	'96–'97 change
Approx. N =	17500	18600	18300	17300	17500	17800	18600		14800	14800	15300	15800	17000	15600	15500	
Total	6.9	7.0	6.6	7.7	7.1	7.1	5.5	-1.6s	10.0	9.6	10.4	10.5	9.7	8.6	8.9	+0.3
Sex:																
Male	12.7	12.5	10.9	12.8	11.8	11.4	9.9	-1.5	18.7	18.1	19.3	19.2	17.2	15.0	14.9	-0.1
Female	1.4	2.0	2.7	2.4	2.9	2.9	1.5	-1.4s	1.3	1.8	2.0	2.1	2.1	2.3	2.7	+0.4
College Plans:																
None or under 4 yrs.	12.7	17.1	15.5	16.7	15.4	16.4	12.6	-3.8	16.9	17.5	20.2	19.9	20.3	16.3	18.5	+2.2
Complete 4 yrs.	6.1	5.5	5.3	6.5	6.0	5.6	4.6	-1.0	8.4	8.0	8.4	8.5	7.8	7.2	7.2	0.0
Region:																
Northeast	5.0	4.9	3.4	6.1	5.4	4.9	3.2	-1.7	8.6	5.3	8.0	9.0	7.6	6.8	9.3	+2.5
North Central	7.1	7.5	7.2	7.1	7.6	8.3	6.8	-1.5	11.0	9.6	10.0	10.0	11.0	9.5	7.1	-2.4
South	9.5	9.3	8.0	9.9	8.7	8.1	6.7	-1.4	11.6	11.4	11.8	11.7	10.9	10.2	10.2	0.0
West	3.5	4.4	6.3	6.0	5.0	5.9	4.1	-1.8	7.8	10.9	11.1	10.9	7.7	6.0	8.2	+2.2
Population Density:																
Large MSA	4.8	4.2	3.3	4.6	4.1	4.2	3.6	-0.6	5.9	6.4	6.5	6.2	5.9	5.5	4.2	-1.3
Other MSA	6.2	6.9	6.8	6.4	6.7	7.1	4.7	-2.4s	9.2	9.3	10.1	10.9	9.2	8.4	8.3	-0.1
Non-MSA	10.4	10.3	9.9	13.0	11.2	10.6	9.0	-1.6	14.7	13.3	14.1	13.9	15.0	12.2	14.7	+2.5
Parental Education:[a]																
1.0-2.0 (Low)	11.4	7.8	9.4	8.9	10.6	6.3	8.3	+2.0	6.6	10.1	10.9	9.4	9.6	8.1	9.0	+0.9
2.5-3.0	8.4	8.5	7.5	8.4	9.9	8.8	6.0	-2.8s	12.1	11.0	12.2	12.5	10.4	9.7	9.4	-0.3
3.5-4.0	6.7	7.0	7.5	8.7	7.0	7.2	6.5	-0.7	10.6	10.5	10.9	10.2	10.9	8.3	10.3	+2.0
4.5-5.0	4.8	7.0	5.2	6.1	5.0	6.8	4.8	-2.0	9.3	7.6	9.9	9.8	9.8	8.5	7.2	-1.3
5.5-6.0 (High)	6.1	4.6	4.9	6.8	5.8	5.9	3.7	-2.2	8.6	8.1	7.0	8.9	6.0	7.7	8.3	+0.6
Race (2-year average):[b]																
White	—	8.3	8.0	8.1	8.9	8.8	7.6	-1.2	—	11.4	12.0	12.6	12.0	11.0	10.4	-0.6
Black	—	1.8	2.7	3.2	2.6	2.2	2.6	+0.4	—	2.9	2.3	2.3	2.5	2.5	2.8	+0.3
Hispanic	—	4.2	4.0	5.0	5.7	5.2	4.6	-0.6	—	6.2	6.1	4.3	3.6	4.0	4.6	+0.6

NOTES: Level of significance of difference between the two most recent classes: s =.05, ss =.01, sss =.001.
'—' indicates data not available.
See Table D-39 for the number of subgroup cases.
See Appendix B for definition of variables in table.
Data based on one of two forms in 1991-96 and on two of four forms in 1997; N is one-half of N indicated.

SOURCE: The Monitoring the Future Study, the University of Michigan.

[a] Parental education is an average score of mother's education and father's education. See Appendix B for details.

[b] To derive percentages for each racial subgroup, data for the specified year *and* the previous year have been combined to increase subgroup sample sizes and thus provide more stable estimates.

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TABLE D-34
Smokeless Tobacco: Trends in Thirty-Day Prevalence of Use by Subgroups for Twelfth Graders

	Percent who used in last thirty days																							
	Class of 1975	Class of 1976	Class of 1977	Class of 1978	Class of 1979	Class of 1980	Class of 1981	Class of 1982	Class of 1983	Class of 1984	Class of 1985	Class of 1986	Class of 1987	Class of 1988	Class of 1989	Class of 1990[a]	Class of 1991[a]	Class of 1992	Class of 1993	Class of 1994	Class of 1995	Class of 1996	Class of 1997	'96–'97 change
Approx. N =	9400	15400	17100	17800	15500	15900	17500	17700	16300	15900	16000	15200	16300	16300	16700	15200	15000	15800	16300	15400	15400	14300	15400	
Total	—	—	—	—	—	—	—	—	—	—	—	11.5	11.3	10.3	8.4	—	—	11.4	10.7	11.1	12.2	9.8	9.7	-0.1
Sex:																								
Male	—	—	—	—	—	—	—	—	—	—	—	22.3	22.8	19.9	15.9	—	—	20.8	19.7	20.3	23.6	19.5	18.7	-0.8
Female	—	—	—	—	—	—	—	—	—	—	—	1.6	0.7	1.7	1.2	—	—	2.0	2.3	2.6	1.8	1.1	1.2	+0.1
College Plans:																								
None or under 4 yrs	—	—	—	—	—	—	—	—	—	—	—	14.5	15.5	13.1	9.6	—	—	18.0	14.9	15.8	18.7	17.6	16.9	-0.7
Complete 4 yrs	—	—	—	—	—	—	—	—	—	—	—	9.8	9.0	8.8	7.7	—	—	9.4	9.4	9.3	9.9	7.6	7.4	-0.2
Region:																								
Northeast	—	—	—	—	—	—	—	—	—	—	—	9.5	7.3	5.9	5.0	—	—	8.2	9.6	12.0	9.6	8.4	6.9	-1.5
North Central	—	—	—	—	—	—	—	—	—	—	—	13.5	11.3	10.8	8.3	—	—	12.3	13.6	14.7	16.7	12.6	13.4	+0.8
South	—	—	—	—	—	—	—	—	—	—	—	12.2	13.7	12.1	9.8	—	—	12.5	11.1	9.7	11.9	9.2	9.0	-0.2
West	—	—	—	—	—	—	—	—	—	—	—	9.3	11.7	10.9	9.1	—	—	11.1	7.0	8.5	8.6	8.5	9.1	+0.6
Population Density:																								
Large MSA	—	—	—	—	—	—	—	—	—	—	—	9.0	6.4	7.7	6.8	—	—	5.9	7.1	7.5	12.5	8.6	6.5	-2.1
Other MSA	—	—	—	—	—	—	—	—	—	—	—	8.9	10.5	8.5	7.6	—	—	11.1	9.9	11.3	9.5	7.4	7.4	0.0
Non-MSA	—	—	—	—	—	—	—	—	—	—	—	17.1	17.5	16.1	11.7	—	—	16.9	15.0	14.7	16.7	15.3	17.9	+2.6
Parental Education:[b]																								
1.0-2.0 (Low)	—	—	—	—	—	—	—	—	—	—	—	8.6	11.7	10.7	5.3	—	—	14.9	7.0	12.3	9.8	6.3	5.8	-0.5
2.5-3.0	—	—	—	—	—	—	—	—	—	—	—	14.4	11.5	10.7	7.0	—	—	12.4	11.6	12.9	11.5	10.4	10.7	+0.3
3.5-4.0	—	—	—	—	—	—	—	—	—	—	—	11.5	12.1	10.6	9.0	—	—	12.4	10.8	9.8	12.8	9.1	10.4	+1.3
4.5-5.0	—	—	—	—	—	—	—	—	—	—	—	10.4	11.7	11.8	10.2	—	—	8.0	13.3	11.1	12.8	11.4	9.1	-2.3
5.5-6.0 (High)	—	—	—	—	—	—	—	—	—	—	—	7.7	8.1	7.2	8.4	—	—	10.6	7.8	10.2	11.6	8.1	9.9	+1.8
Race (2-year average):[c]																								
White	—	—	—	—	—	—	—	—	—	—	—	—	12.9	12.0	10.6	—	—	—	13.8	13.8	13.8	13.0	12.2	-0.8
Black	—	—	—	—	—	—	—	—	—	—	—	—	2.1	4.5	4.5	—	—	—	2.0	1.9	2.1	2.7	2.2	-0.5
Hispanic	—	—	—	—	—	—	—	—	—	—	—	—	4.4	5.2	5.1	—	—	—	6.0	5.4	7.6	8.1	5.3	-2.8

NOTES: Level of significance of difference between the two most recent classes: s = .05, ss = .01, sss = .001. '—' indicates data not available.
See Table D-40 for the number of subgroup cases.
See Appendix B for definition of variables in table.
Data based on one of six forms; N is one-sixth of N indicated.

SOURCE: The Monitoring the Future Study, the University of Michigan.

[a] Prevalence of smokeless tobacco was not asked of twelfth graders in 1990 and 1991. Prior to 1990 the prevalence question on smokeless tobacco was located near the end of one twelfth-grade questionnaire form, whereas after 1991 the question was placed earlier and in a different form. This shift could explain the discontinuities between the corresponding data.

[b] Parental education is an average score of mother's education and father's education. See Appendix B for details.

[c] To derive percentages for each racial subgroup, data for the specified year *and* the previous year have been combined to increase subgroup sample sizes and thus provide more stable estimates.

TABLE D-35
Smokeless Tobacco: Trends in Thirty-Day Prevalence of Daily Use by Subgroups for Eighth and Tenth Graders

	Percent who used daily in last thirty days															
	8th Grade								10th Grade							
	1991	1992	1993	1994	1995	1996	1997	'96–'97 change	1991	1992	1993	1994	1995	1996	1997	'96–'97 change
Approx. N =	17500	18600	18300	17300	17500	17800	18600		14800	14800	15300	15800	17000	15600	15500	
Total	1.6	1.8	1.5	1.9	1.2	1.5	1.0	-0.5	3.3	3.0	3.3	3.0	2.7	2.2	2.2	0.0
Sex:																
Male	3.1	3.4	2.9	3.2	2.2	2.9	1.7	-1.2s	6.3	6.3	6.4	5.9	5.2	4.2	4.0	-0.2
Female	0.2	0.3	0.3	0.3	0.3	0.2	0.3	+0.1	0.2	0.1	0.3	0.2	0.2	0.2	0.3	+0.1
College Plans:																
None or under 4 yrs.	4.1	5.6	4.4	5.4	3.5	5.1	3.6	-1.5	7.6	8.5	8.8	6.5	7.8	5.4	6.3	+0.9
Complete 4 yrs.	1.2	1.2	1.1	1.4	0.9	1.0	0.6	-0.4	2.3	1.9	2.2	2.2	1.9	1.6	1.5	-0.1
Region:																
Northeast	1.2	0.9	0.6	0.8	0.6	0.8	0.6	-0.2	1.8	1.0	1.7	3.0	2.0	1.3	1.5	+0.2
North Central	1.5	1.6	1.6	1.4	1.1	2.0	1.2	-0.8	3.1	2.9	2.5	2.4	2.5	2.1	1.4	-0.7
South	2.4	3.0	2.2	3.3	1.8	2.0	1.5	-0.5	4.7	4.5	5.2	3.3	4.1	3.3	3.5	+0.2
West	0.6	0.8	1.0	0.9	0.8	0.8	0.2	-0.6	2.7	2.9	3.1	3.6	1.1	1.0	1.7	+0.7
Population Density:																
Large MSA	0.5	0.6	0.7	0.7	0.4	0.4	0.5	+0.1	1.5	1.6	1.1	1.0	1.5	0.6	0.8	+0.2
Other MSA	1.2	1.9	1.5	1.0	0.9	1.2	0.8	-0.4	3.1	2.8	3.2	3.5	2.3	2.3	1.7	-0.6
Non-MSA	3.3	2.8	2.5	4.6	2.6	3.4	1.6	-1.8s	5.0	4.9	5.3	4.2	4.9	3.6	4.6	+1.0
Parental Education:[a]																
1.0-2.0 (Low)	2.8	3.5	2.0	3.0	2.2	1.5	3.2	+1.7	2.5	3.9	4.1	3.2	3.6	1.7	3.8	+2.1
2.5-3.0	2.2	2.6	1.9	2.7	1.7	3.1	1.1	-2.0ss	4.8	5.0	4.3	3.8	3.4	3.4	2.0	-1.4
3.5-4.0	1.4	1.2	1.8	1.9	1.2	1.7	0.9	-0.8	3.3	2.8	3.1	3.0	2.8	1.4	2.4	+1.0
4.5-5.0	0.8	1.3	1.1	1.1	0.9	0.3	0.8	+0.5	2.5	1.7	2.5	2.7	2.9	2.3	1.7	-0.6
5.5-6.0 (High)	1.0	0.9	0.6	0.7	0.8	0.8	0.4	-0.4	2.5	1.6	2.7	1.7	1.0	1.4	1.9	+0.5
Race (2-year average)[b]																
White	—	2.0	2.0	2.0	1.9	1.7	1.5	-0.2	—	3.8	3.9	3.8	3.3	2.9	2.5	-0.4
Black	—	0.3	0.4	0.7	0.6	0.4	0.5	+0.1	—	0.5	0.4	0.6	0.5	0.4	0.4	0.0
Hispanic	—	0.8	0.9	0.9	0.7	1.1	0.9	-0.2	—	1.1	1.0	0.8	1.2	1.2	1.3	+0.1

NOTES: For all subgroups: Due to small sample sizes, tests of significance have not been performed.
'—' indicates data not available.
See Table D-39 for the number of subgroup cases.
See Appendix B for definition of variables in table.
Data based on one of two forms in 1991-96 and on two of four forms in 1997; N is one-half of N indicated.

SOURCE: The Monitoring the Future Study, the University of Michigan.

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[a] Parental education is an average score of mother's education and father's education. See Appendix B for details.

[b] To derive percentages for each racial subgroup, data for the specified year *and* the previous year have been combined to increase subgroup sample sizes and thus provide more stable estimates.

TABLE D-36
Smokeless Tobacco: Trends in Thirty-Day Prevalence of Daily Use by Subgroups for Twelfth Graders

	Percent who used daily in last thirty days																							
	Class of 1975	Class of 1976	Class of 1977	Class of 1978	Class of 1979	Class of 1980	Class of 1981	Class of 1982	Class of 1983	Class of 1984	Class of 1985	Class of 1986	Class of 1987	Class of 1988	Class of 1989	Class of 1990[a]	Class of 1991[a]	Class of 1992	Class of 1993	Class of 1994	Class of 1995	Class of 1996	Class of 1997	96–'97 change
Approx. N =	9400	15400	17100	17800	15500	15900	17500	17700	16300	15900	16000	15200	16300	16300	16700	15200	15000	15800	16300	15400	15400	14300	15400	
Total	—	—	—	—	—	—	—	—	—	—	—	4.7	5.1	4.3	3.3	—	—	4.3	3.3	3.9	3.6	3.3	4.4	+1.1
Sex:																								
Male	—	—	—	—	—	—	—	—	—	—	—	10.0	10.7	8.6	6.8	—	—	7.8	6.4	7.2	7.2	7.1	8.6	+1.5
Female	—	—	—	—	—	—	—	—	—	—	—	0.1	0.1	0.5	0.0	—	—	0.5	0.4	0.3	0.1	0.1	0.2	+0.1
College Plans:																								
None or under 4 yrs	—	—	—	—	—	—	—	—	—	—	—	7.1	7.8	5.8	4.2	—	—	7.4	4.3	6.6	6.5	6.8	9.1	+2.3
Complete 4 yrs.	—	—	—	—	—	—	—	—	—	—	—	3.3	3.7	3.5	2.7	—	—	3.3	3.1	2.8	2.7	2.6	2.7	+0.1
Region:																								
Northeast	—	—	—	—	—	—	—	—	—	—	—	4.6	2.1	2.3	1.3	—	—	1.8	1.9	4.5	2.2	3.2	3.5	+0.3
North Central	—	—	—	—	—	—	—	—	—	—	—	4.5	4.5	3.5	2.2	—	—	4.0	4.4	4.7	4.9	4.1	7.0	+2.9
South	—	—	—	—	—	—	—	—	—	—	—	6.1	7.4	6.3	4.2	—	—	5.4	4.0	3.5	4.2	3.1	3.6	+0.5
West	—	—	—	—	—	—	—	—	—	—	—	2.9	5.5	4.0	4.9	—	—	5.1	1.7	3.2	1.6	2.9	3.0	+0.1
Population Density:																								
Large MSA	—	—	—	—	—	—	—	—	—	—	—	3.4	3.3	3.0	3.0	—	—	2.0	1.7	2.0	2.1	2.6	3.3	+0.7
Other MSA	—	—	—	—	—	—	—	—	—	—	—	3.3	4.3	2.5	2.8	—	—	4.2	3.0	3.6	3.2	1.9	3.3	+1.4
Non-MSA	—	—	—	—	—	—	—	—	—	—	—	7.8	8.5	8.9	4.6	—	—	6.5	5.2	6.7	5.8	6.7	7.7	+1.0
Parental Education:[b]																								
1.0-2.0 (Low)	—	—	—	—	—	—	—	—	—	—	—	1.9	5.6	5.3	1.8	—	—	6.7	3.9	6.6	2.7	2.2	1.3	-0.9
2.5-3.0	—	—	—	—	—	—	—	—	—	—	—	7.6	6.9	3.2	3.9	—	—	4.8	3.5	3.8	4.7	3.6	5.8	+2.2
3.5-4.0	—	—	—	—	—	—	—	—	—	—	—	3.5	4.7	5.4	3.1	—	—	5.2	3.3	3.3	2.9	3.6	3.7	+0.1
4.5-5.0	—	—	—	—	—	—	—	—	—	—	—	3.9	5.0	4.7	4.6	—	—	2.4	3.7	3.9	3.5	4.6	3.9	-0.7
5.5-6.0 (High)	—	—	—	—	—	—	—	—	—	—	—	3.3	2.1	3.5	1.2	—	—	2.6	1.8	2.7	2.7	1.1	5.0	+3.9s
Race (2-year average):[c]																								
White	—	—	—	—	—	—	—	—	—	—	—	—	5.8	5.4	4.5	—	—	—	4.8	4.7	4.6	4.1	5.0	+0.9
Black	—	—	—	—	—	—	—	—	—	—	—	—	0.6	1.0	0.5	—	—	—	0.3	0.7	0.6	0.3	0.2	-0.1
Hispanic	—	—	—	—	—	—	—	—	—	—	—	—	0.8	2.1	2.1	—	—	—	1.6	0.7	1.2	2.2	1.9	-0.3

NOTES: For all subgroups: Due to small sample sizes, tests of significance have not been performed.
'—' indicates data not available.
See Table D-40 for the number of subgroup cases.
See Appendix B for definition of variables in table.
Data based on one of six forms; N is one-sixth of N indicated.

SOURCE: The Monitoring the Future Study, the University of Michigan.

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[a] Prevalence of smokeless tobacco was not asked of twelfth graders in 1990 and 1991. Prior to 1990 the prevalence question on smokeless tobacco was located near the end of one twelfth-grade questionnaire form, whereas after 1991 the question was placed earlier and in a different form. This shift could explain the discontinuities between the corresponding data.

[b] Parental education is an average score of mother's education and father's education. See Appendix B for details.

[c] To derive percentages for each racial subgroup, data for the specified *year and* the previous year have been combined to increase subgroup sample sizes and thus provide more stable estimates.

TABLE D-37
Steroids: Trends in Annual Prevalence of Use by Subgroups for Eighth and Tenth Graders

	Percent who used in last twelve months															
	8th Grade								10th Grade							
	1991	1992	1993	1994	1995	1996	1997	'96-'97 change	1991	1992	1993	1994	1995	1996	1997	'96-'97 change
Approx. N =	17500	18600	18300	17300	17500	17800	18600		14800	14800	15300	15800	17000	15600	15500	
Total	1.0	1.1	0.9	1.2	1.0	0.9	1.0	+0.1	1.1	1.1	1.0	1.1	1.2	1.2	1.2	0.0
Sex:																
Male	1.8	1.7	1.4	1.8	1.3	1.1	1.3	+0.2	1.9	1.9	1.7	1.9	2.0	1.7	1.8	+0.1
Female	0.3	0.5	0.3	0.6	0.8	0.7	0.7	0.0	0.3	0.3	0.3	0.4	0.5	0.6	0.6	0.0
College Plans:																
None or under 4 yrs.	2.2	2.4	2.2	2.5	2.2	1.5	2.4	+0.9	1.7	1.3	1.9	2.1	2.1	2.1	2.4	+0.3
Complete 4 yrs.	0.8	0.9	0.7	1.0	0.9	0.8	0.8	0.0	0.9	1.0	0.8	0.9	1.1	1.0	1.0	0.0
Region:																
Northeast	0.7	1.1	0.6	1.0	1.0	1.1	1.0	-0.1	1.2	0.9	1.0	1.0	1.1	1.0	0.9	-0.1
North Central	1.1	1.2	1.0	1.0	1.1	0.8	1.0	+0.2	1.0	1.1	1.2	1.1	1.2	1.4	1.2	-0.2
South	1.2	1.1	1.0	1.6	1.1	0.9	0.9	0.0	1.0	1.2	1.0	1.3	1.3	1.4	1.4	0.0
West	0.7	0.9	0.7	1.0	1.0	0.8	1.1	+0.3	1.0	1.2	0.8	1.1	1.3	0.6	1.3	+0.7s
Population Density:																
Large MSA	0.8	1.0	0.8	0.9	0.9	0.8	0.9	+0.1	1.5	0.9	0.8	0.8	0.8	0.8	1.0	+0.2
Other MSA	1.2	1.2	0.9	1.2	1.2	0.9	0.9	0.0	1.0	1.0	0.9	1.1	1.4	1.2	1.2	0.0
Non-MSA	1.0	0.9	0.9	1.5	0.9	0.9	1.2	+0.3	0.8	1.4	1.4	1.5	1.4	1.5	1.5	0.0
Parental Education:[a]																
1.0-2.0 (Low)	1.8	1.2	1.2	1.6	1.3	0.9	1.4	+0.5	0.7	0.9	1.5	1.8	1.2	1.7	1.7	0.0
2.5-3.0	1.1	1.2	0.8	1.6	1.3	0.7	0.9	+0.2	1.3	1.1	1.0	0.9	1.1	0.7	1.1	+0.4
3.5-4.0	1.0	1.0	1.1	1.3	0.8	0.9	1.2	+0.3	1.0	1.2	1.1	0.8	1.6	1.2	1.4	+0.2
4.5-5.0	0.7	0.9	0.8	0.8	0.8	1.2	0.9	-0.3	0.9	1.0	0.8	1.4	1.1	1.2	1.0	-0.2
5.5-6.0 (High)	1.0	1.3	0.6	0.9	1.5	0.9	1.2	+0.3	1.2	1.4	1.1	1.1	1.0	1.1	1.1	0.0
Race (2-year average):[b]																
White	—	1.1	1.0	1.0	1.1	0.9	0.9	0.0	—	1.0	1.0	1.0	1.2	1.3	1.3	0.0
Black	—	0.7	0.6	0.8	0.9	0.7	0.6	-0.1	—	0.7	0.8	0.8	0.7	0.7	0.5	-0.2
Hispanic	—	1.2	1.1	1.1	1.3	1.5	1.4	-0.1	—	1.2	1.4	1.3	0.9	1.1	1.2	+0.1

NOTES: Level of significance of difference between the two most recent classes: s = .05, ss = .01, sss = .001.
'—' indicates data not available.
See Table D-39 for the number of subgroup cases.
See Appendix B for definition of variables in table.

SOURCE: The Monitoring the Future Study, the University of Michigan.

[a] Parental education is an average score of mother's education and father's education. See Appendix B for details.

[b] To derive percentages for each racial subgroup, data for the specified year *and* the previous year have been combined to increase subgroup sample sizes and thus provide more stable estimates.

TABLE D-38
Steroids: Trends in Annual Prevalence of Use by Subgroups for Twelfth Graders

Percent who used in last twelve months

	Class of 1975	Class of 1976	Class of 1977	Class of 1978	Class of 1979	Class of 1980	Class of 1981	Class of 1982	Class of 1983	Class of 1984	Class of 1985	Class of 1986	Class of 1987	Class of 1988	Class of 1989	Class of 1990	Class of 1991	Class of 1992	Class of 1993	Class of 1994	Class of 1995	Class of 1996	Class of 1997	'96–'97 change
Approx. N =	9400	15400	17100	17800	15500	15900	17500	17700	16300	15900	16000	15200	16300	16300	16700	15200	15000	15800	16300	15400	15400	14300	15400	
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.9	1.7	1.4	1.1	1.2	1.3	1.5	1.4	1.4	0.0
Sex:																								
Male	—	—	—	—	—	—	—	—	—	—	—	—	—	—	2.8	2.6	2.4	2.1	2.5	2.1	2.4	2.2	2.5	+0.3
Female	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.9	0.3	0.2	0.1	0.1	0.5	0.6	0.4	0.5	+0.1
College Plans:																								
None or under 4 yrs	—	—	—	—	—	—	—	—	—	—	—	—	—	—	2.3	2.2	2.1	2.1	2.0	1.9	2.0	2.3	2.3	0.0
Complete 4 yrs	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.6	1.3	1.2	0.8	0.9	1.1	1.2	1.1	1.2	+0.1
Region:																								
Northeast	—	—	—	—	—	—	—	—	—	—	—	—	—	—	2.0	1.3	1.2	0.6	1.5	1.5	1.6	1.3	2.1	+0.8
North Central	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.5	1.3	1.4	1.4	0.8	2.2	1.5	2.1	2.1	0.0
South	—	—	—	—	—	—	—	—	—	—	—	—	—	—	2.1	2.2	1.7	0.6	1.6	1.0	1.7	1.3	0.5	-0.8s
West	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.9	1.7	1.0	2.3	1.1	0.8	1.0	0.3	1.6	+1.3s
Population Density:																								
Large MSA	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.6	1.3	1.1	1.0	0.7	1.1	1.4	1.3	0.8	-0.5
Other MSA	—	—	—	—	—	—	—	—	—	—	—	—	—	—	2.3	1.5	1.4	1.4	0.9	1.5	1.3	1.3	1.7	+0.4
Non-MSA	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.1	2.4	1.6	0.8	2.2	1.3	2.1	1.5	1.6	+0.1
Parental Education:[a]																								
1.0-2.0 (Low)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.6	1.1	2.0	2.1	1.1	2.8	1.1	1.5	3.4	+1.9
2.5-3.0	—	—	—	—	—	—	—	—	—	—	—	—	—	—	2.1	2.0	0.6	0.9	1.3	1.7	1.3	1.9	1.4	-0.5
3.5-4.0	—	—	—	—	—	—	—	—	—	—	—	—	—	—	2.6	2.3	1.6	1.3	1.5	1.1	1.1	1.3	1.1	-0.2
4.5-5.0	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.3	1.1	1.6	0.9	1.3	0.6	2.0	1.1	1.2	+0.1
5.5-6.0 (High)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	2.1	1.0	0.5	0.8	0.8	1.2	1.4	1.1	1.3	+0.2
Race (2-year average):[b]																								
White	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.6	1.3	1.3	1.2	1.1	1.4	1.3	1.2	-0.1
Black	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.8	1.2	0.5	1.1	1.8	1.2	1.4	1.5	+0.1
Hispanic	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	2.3	3.3	1.8	0.9	1.7	1.3	0.6	1.6	+1.0

NOTES: Level of significance of difference between the two most recent classes: s = .05, ss = .01, sss = .001. '—' indicates data not available.
See Table D-40 for the number of subgroup cases.
See Appendix B for definition of variables in table.
Data based on one of six forms in 1989-90; N is one-sixth of N indicated. Data based on two of six forms in 1991-97; N is two-sixths of N indicated.

SOURCE: The Monitoring the Future Study, the University of Michigan.

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[a] Parental education is an average score of mother's education and father's education. See Appendix B for details.

[b] To derive percentages for each racial subgroup, data for the specified year *and* the previous year have been combined to increase subgroup sample sizes and thus provide more stable estimates.

TABLE D-39
Approximate Weighted Ns by Subgroups for Eighth and Tenth Graders

	8th Grade							10th Grade						
	1991	1992	1993	1994	1995	1996	1997	1991	1992	1993	1994	1995	1996	1997
Total	17,500	18,600	18,300	17,300	17,500	17,800	18,600	14,800	14,800	15,300	15,800	17,000	15,600	15,500
Sex:														
Male	8,600	8,800	8,600	8,300	8,100	8,400	8,600	7,200	7,000	7,300	7,700	8,300	7,500	7,400
Female	8,600	9,300	9,200	8,600	8,700	8,800	9,300	7,400	7,400	7,800	7,900	8,400	7,800	7,800
College Plans:														
None or under 4 yrs.	2,300	2,400	2,100	2,000	1,900	2,200	1,900	2,600	2,400	2,500	2,700	2,500	2,300	2,200
Complete 4 yrs.	14,600	15,400	15,400	14,700	14,800	14,800	15,800	11,900	12,000	12,400	12,800	14,200	13,000	13,000
Region:														
Northeast	3,000	3,700	3,900	3,400	3,100	3,200	3,400	2,700	3,000	2,900	3,100	3,300	3,100	3,300
North Central	5,300	5,300	4,700	4,200	4,300	4,600	4,100	3,700	3,800	4,800	4,700	4,400	3,900	3,900
South	6,300	6,200	6,400	6,300	6,600	6,300	7,200	4,900	5,000	4,900	5,200	6,100	5,600	5,500
West	2,900	3,400	3,300	3,400	3,500	3,700	3,900	3,500	3,000	2,700	2,800	3,200	3,000	2,800
Population Density:														
Large MSA	4,500	5,700	5,500	4,400	5,200	5,200	5,000	3,400	3,700	3,500	4,100	4,700	4,300	4,300
Other MSA	8,400	8,300	8,800	8,300	7,800	8,400	9,000	7,400	7,300	7,600	7,500	8,200	7,500	7,300
Non-MSA	4,600	4,600	4,000	4,600	4,500	4,200	4,600	4,000	3,800	4,200	4,200	4,100	3,800	3,900
Parental Education:														
1.0-2.0 (Low)	1,400	1,700	1,700	1,600	1,500	1,500	1,500	1,300	1,300	1,300	1,300	1,200	1,100	1,300
2.5-3.0	4,400	4,600	4,500	4,100	3,900	4,300	4,000	3,900	3,900	4,100	4,100	4,100	3,600	3,700
3.5-4.0	4,100	4,300	4,300	4,200	4,000	4,100	4,300	3,900	3,900	4,100	4,300	4,600	4,300	4,100
4.5-5.0	4,100	4,100	4,100	3,900	3,900	3,900	4,500	3,500	3,400	3,500	3,700	4,000	3,900	3,700
5.5-6.0 (High)	2,200	2,300	2,300	2,200	2,300	2,200	2,600	1,800	1,700	1,700	1,800	2,300	1,900	1,900
Race (2-year average)*														
White	—	21,900	22,000	20,900	19,800	20,200	21,400	—	19,600	20,700	22,000	22,900	22,400	20,900
Black	—	4,200	4,800	5,500	5,600	5,300	4,700	—	3,900	3,600	3,300	3,300	3,100	3,200
Hispanic	—	3,400	3,600	4,000	4,000	4,000	4,200	—	2,600	2,700	2,800	2,900	3,000	3,200

NOTES: '—' indicates data not available.
See Appendix B for definition of variables in table.

SOURCE: The Monitoring the Future Study, the University of Michigan.

*Ns for each racial subgroup represent the combination of the specified year *and* the previous year. Data have been combined to increase subgroup sample sizes and thus provide more stable estimates.

TABLE D-40
Approximate Weighted Ns by Subgroups for Twelfth Graders

	Class of 1975	Class of 1976	Class of 1977	Class of 1978	Class of 1979	Class of 1980	Class of 1981	Class of 1982	Class of 1983	Class of 1984	Class of 1985	Class of 1986	Class of 1987	Class of 1988	Class of 1989	Class of 1990	Class of 1991	Class of 1992	Class of 1993	Class of 1994	Class of 1995	Class of 1996	Class of 1997
Total	9,400	15,400	17,100	17,800	15,500	15,900	17,500	17,700	16,300	15,900	16,000	15,200	16,300	16,300	16,700	15,200	15,000	15,800	16,300	15,400	15,400	14,300	15,400
Sex:																							
Male	4,300	6,900	7,100	8,500	7,500	7,500	8,400	8,500	7,800	7,600	7,600	7,100	7,700	7,700	8,000	7,700	7,400	7,400	7,500	6,900	7,200	6,700	7,100
Female	5,200	7,000	7,600	9,000	8,000	7,800	8,600	8,600	8,000	7,800	8,000	7,700	8,200	8,200	8,300	7,100	7,200	7,900	8,200	8,000	7,800	7,100	7,700
College Plans:																							
None or under 4 yrs.	—	6,500	6,700	8,100	6,800	6,300	6,700	7,200	6,300	5,900	5,600	5,100	5,000	4,700	4,800	4,200	4,000	3,700	3,700	3,400	3,300	2,600	3,200
Complete 4 yrs.	—	6,800	7,200	8,600	8,000	8,500	9,700	9,200	8,800	8,900	9,300	9,100	10,300	10,600	11,000	10,100	10,300	11,200	11,600	11,100	11,200	10,800	11,000
Region:																							
Northeast	2,200	3,400	3,700	4,400	3,800	3,600	4,100	4,600	3,900	3,200	3,700	3,600	3,500	3,200	3,200	3,300	2,800	2,800	2,700	2,700	2,800	3,000	3,300
North Central	2,900	4,500	4,600	5,200	4,800	4,700	5,300	5,200	4,600	4,500	4,400	4,300	4,400	4,300	4,500	4,200	4,000	4,400	4,600	4,000	4,300	3,800	4,100
South	3,000	4,300	4,600	6,000	4,800	4,800	5,300	5,300	5,200	5,300	4,900	4,700	5,200	5,600	6,100	5,000	5,100	5,600	5,800	5,700	5,400	5,100	5,300
West	1,400	2,200	2,200	2,500	2,600	2,700	2,800	2,600	2,600	2,900	3,000	2,600	3,200	3,200	2,900	2,700	3,100	3,000	3,200	3,000	2,900	2,400	2,700
Population Density:																							
Large MSA	2,100	3,700	4,000	4,600	4,000	3,900	4,500	4,800	4,200	4,100	4,200	3,700	4,200	4,400	4,000	3,800	3,600	3,600	3,700	4,300	4,400	3,400	4,100
Other MSA	4,000	5,700	6,200	8,000	6,800	6,700	7,100	7,300	6,800	6,900	6,900	7,000	8,000	7,700	8,800	7,700	7,200	8,200	7,800	7,100	7,000	7,000	7,500
Non-MSA	3,400	5,000	4,900	5,500	5,200	5,200	5,900	5,600	5,300	4,900	4,900	4,500	4,100	4,200	3,900	3,700	4,200	4,000	4,800	4,000	4,000	3,900	3,800
Parental Education:																							
1.0-2.0 (Low)	1,700	2,200	2,600	3,100	2,500	2,300	2,400	2,700	2,200	1,900	1,800	1,800	1,700	1,600	1,700	1,600	1,500	1,400	1,600	1,400	1,200	1,100	1,300
2.5-3.0	3,000	4,300	5,400	6,200	5,600	5,300	5,800	5,900	5,500	5,100	5,100	4,600	4,500	4,500	4,600	4,300	4,100	4,100	4,300	3,700	3,700	3,300	3,600
3.5-4.0	1,600	2,500	3,200	4,000	3,600	3,600	4,200	4,200	3,900	4,000	4,000	3,300	4,300	4,400	4,500	4,100	4,200	4,600	4,500	4,300	4,400	3,800	4,100
4.5-5.0	1,100	1,600	2,200	2,800	2,600	2,700	3,100	2,900	2,800	2,900	3,000	2,900	3,400	3,500	3,500	3,100	3,100	3,400	3,600	3,500	3,700	3,500	3,500
5.5-6.0 (High)	440	710	1,100	1,200	1,200	1,300	1,500	1,300	1,200	1,400	1,500	1,500	1,800	1,900	1,700	1,600	1,500	1,700	1,700	1,800	1,800	2,100	2,100
Race (2-yr. average):*																							
White	—	—	23,400	26,500	27,500	25,600	26,300	27,300	26,200	24,700	24,200	23,600	23,800	24,200	24,000	23,400	21,900	21,500	22,000	21,800	21,600	20,700	19,800
Black	—	—	3,300	3,700	3,500	3,500	4,000	4,000	3,900	4,000	4,000	3,500	3,200	3,600	3,900	3,600	3,200	3,900	4,200	3,600	3,300	3,200	3,600
Hispanic	—	—	890	1,000	940	740	930	1,300	1,300	1,200	1,200	1,500	1,900	2,100	2,400	2,500	2,400	2,600	2,900	3,100	2,700	2,600	2,800

NOTES: '—' indicates data not available.
See Appendix B for definition of variables in table.

SOURCE: The Monitoring the Future Study the University of Michigan.

*Ns for each racial subgroup represent the combination of the specified year *and* the previous year. Data have been combined to increase subgroup sample sizes and thus provide more stable estimates.

Appendix E

TRENDS IN PREVALENCE RATES FOR SPECIFIC DRUGS WITHIN GENERAL CLASSES

In one of the six questionnaire forms administered to 12th graders, respondents who answer that they used amphetamines in the prior 12 months are then asked a small set of additional questions about that use. One of those questions asks, "Which amphetamines have you taken in the last year without a doctor's orders? (Mark all that apply)" A pre-specified list of different types of amphetamines (e.g. Benzedrine, Dexadrine, Ritalin, etc.) is provided, along with a category labeled "Other" and one labeled, "Don't know the name of some amphetamines I have used." Parallel questions are included in the same questionnaire form for psychedelics other than LSD, tranquilizers, and opiates other than heroin.

The answers to these four question sets are provided below, covering the twenty-one year interval from 1976 to 1997. Because these questions are contained in only one of the six twelfth-grade questionnaire forms (five in earlier years), the number of cases on which the estimates are based is lower than most of the prevalence estimates contained elsewhere in this volume. (The relevant numbers of cases are provided in the bottom rows of each table.)

We provide one other caution to the reader in interpreting these results. For some of these drug classes the absolute prevalence rates may be underestimates of the true rates, simply because some users of a particular sub-class may not realize that the substance (e.g., peyote) actually is a sub-class of the more general class (in this case, psychedelics other that LSD). Such respondents, therefore, may not indicate use on the general question (about psychedelics other than LSD), which means they would never get asked the question about using the sub-class drug (peyote). As a result, they would not be counted among the users.

In the questionnaire we go to some length to state both the full list of common street names, as well as proper names for the drugs in the general class, *before* asking about use of the general class of drugs. However, because two of the drugs in the sub-class lists (PCP and crystal methamphetamine) also have been included in recent years as a general class (without branching) on a different questionnaire for, we know that they show higher prevalence rates when not treated as a sub-class. For example, the 1997 annual prevalence rate for PCP generated by a general question about PCP use asked of all seniors was 2.3%, whereas the rate generated when the drug was treated as a sub-category of psychedelics other than LSD was only 0.9%. This is likely an extreme case, however, because proper classification of PCP is quite ambiguous—it actually is an animal tranquilizer with hallucinogenic effects. (In fact, our suspicion that students were not categorizing PCP as a " psychedelic other than LSD"—even though it was given in the list of examples for that question—is what led us to ask separate questions about its use.

Despite the fact that the questions about sub-classes of drugs may underestimate the *prevalence* of use to some degree, we think they are helpful for discerning long-term trends. To stick with the PCP example, which may be a worst case, both the general questions about PCP use and the question that treats PCP as a sub-category of a psychedelics other than LSD have shown very similar trends since 1979, when both were first available for comparison. Both measures showed a substantial decline in PCP use from 1979 through the mid 1980s, followed by a period of stability in use at low levels, followed by a modest increase in use in the 1990s until 1997, when use began to fall again. Thus if we had only the results from the sub-category question available, we would have obtained quite an accurate picture of the trend story, even though we would have been underestimating the absolute prevalence rate to some degree.

We conclude that the data for the other specific drugs classes also should provide a fair approximation of the trend stories. Most such prevalence data probably underestimate the true rates, but to a lesser degree, since they are generally not as difficult as PCP for the respondent to categorize accurately.

TABLE E-1
Specific Psychedelics Other than LSD: Trends in Annual Prevalence of Use for All Seniors

What psychedelics other than LSD have you taken during the last year?	Percent of ALL SENIORS using drug indicated in past year																						
	Class of 1976	Class of 1977	Class of 1978	Class of 1979	Class of 1980	Class of 1981	Class of 1982	Class of 1983	Class of 1984	Class of 1985	Class of 1986	Class of 1987	Class of 1988	Class of 1989	Class of 1990	Class of 1991	Class of 1992	Class of 1993	Class of 1994	Class of 1995	Class of 1996	Class of 1997	'96–'97 change
Mescaline	5.1	5.0	5.0	4.1	4.8	3.7	3.5	2.7	3.0	2.3	2.1	1.6	0.8	0.9	0.6	0.6	0.6	0.8	0.5	1.1	1.2	0.8	-0.4
Peyote	1.8	1.4	1.5	1.1	1.1	0.9	0.6	0.6	0.6	0.5	0.4	0.5	0.3	0.4	0.9	0.1	0.5	0.6	0.6	0.7	0.9	0.8	-0.1
Psilocybin	1.7	1.0	1.3	1.0	1.5	1.6	0.9	0.7	0.7	0.6	0.9	0.6	0.9	0.3	0.7	0.3	0.2	0.5	0.5	0.9	1.4	1.1	-0.3
PCP	2.9	3.3	4.5	4.2	3.5	2.2	1.4	1.5	1.2	0.9	0.8	1.0	0.6	0.4	0.8	0.5	0.6	0.7	0.9	1.2	1.1	0.9	-0.3
Concentrated THC	5.6	5.7	5.3	4.6	2.6	2.1	1.5	1.4	0.9	1.1	0.8	1.0	0.7	0.4	0.4	0.4	0.2	0.5	0.4	0.9	1.5	1.2	-0.2
Other	3.3	3.7	3.4	3.9	2.9	2.7	1.9	1.5	1.5	1.3	0.9	0.9	0.7	0.9	0.9	0.6	1.0	0.8	0.7	1.3	1.8	1.9	+0.2
Don't know the names of some I have used	1.2	1.3	1.5	1.6	1.2	1.2	1.1	1.2	0.9	1.0	0.7	0.7	0.5	0.3	0.5	0.4	0.3	0.4	0.6	0.8	0.8	1.2	+0.4
Approx. Wtd. N:	*2800*	*3000*	*3500*	*3100*	*3100*	*3400*	*3500*	*3200*	*3100*	*3100*	*3000*	*3200*	*3200*	*2700*	*2500*	*2500*	*2600*	*2600*	*2500*	*2500*	*2300*	*2500*	

Notes: Level of significance of difference between the two most recent classes: s = .05, ss = .01, sss = .001.
Any apparent inconsistency between the change estimate and the prevalence estimates for the two most recent classes is due to rounding error.
Source: The Monitoring the Future Study, the University of Michigan.

TABLE E-2
Specific Amphetamines: Trends in Annual Prevalence of Use for All Seniors

	Percent of ALL SENIORS using drug indicated in past year																					
What amphetamines have you taken during the last year without a doctor's orders?	Class of 1976	Class of 1977	Class of 1978	Class of 1979	Class of 1980	Class of 1981	Class of 1982	Class of 1983	Class of 1984	Class of 1985	Class of 1986	Class of 1987	Class of 1988	Class of 1989	Class of 1990	Class of 1991	Class of 1992	Class of 1993	Class of 1994	Class of 1995	Class of 1996	Class of 1997	'96–'97 change
Benzedrine	3.5	4.1	3.7	3.1	3.2	3.6	2.9	1.6	1.7	1.9	1.4	1.1	0.5	0.7	0.6	0.1	0.2	0.3	0.6	0.2	0.3	0.2	-0.1
Dexedrine	2.9	3.5	3.7	4.0	4.0	5.1	2.8	1.4	1.6	1.2	0.9	0.6	0.4	0.6	0.5	0.3	0.2	0.2	0.5	0.4	0.3	0.9	+0.6s
Methedrine	3.4	4.2	3.9	4.7	4.4	5.6	4.7	3.2	3.0	2.9	2.0	1.5	1.2	0.7	0.5	0.3	0.4	0.4	0.5	0.3	0.3	0.5	+0.2
Ritalin	0.5	0.7	0.6	0.4	0.6	0.7	0.5	0.3	0.3	0.4	0.3	0.3	0.3	0.4	0.5	0.1	0.1	0.4	1.0	0.8	1.2	2.8	+1.6sss
Preludin	0.6	1.0	1.1	1.3	1.1	1.7	0.8	0.6	0.5	0.4	0.3	0.1	0.2	0.3	0.1	0.1	0.1	0.1	0.3	0.1	0.5	0.2	-0.3
Doxamyl	1.3	1.5	1.1	1.3	1.3	1.1	1.2	0.6	0.9	0.6	0.8	0.5	0.4	0.3	0.2	0.1	0.2	0.3	0.5	0.2	0.4	0.3	-0.2
Methamphetamine	1.9	2.3	2.3	2.4	2.7	3.7	2.8	1.8	2.1	2.0	1.5	1.3	1.2	0.6	0.6	0.8	0.4	0.6	0.6	0.7	0.7	1.1	+0.4
Crystal meth	—	—	—	—	—	—	—	—	—	—	—	—	—	1.2	0.8	1.2	1.1	1.1	1.4	1.6	1.5	1.8	+0.2
Other	4.6	5.9	6.5	6.4	6.4	7.6	4.6	4.2	4.3	3.3	3.7	2.6	1.5	2.1	1.6	1.2	1.5	2.0	2.3	2.0	2.3	2.5	+0.2
Don't know the names of some amphetamines I have used	6.8	7.2	6.8	7.5	8.7	11.1	9.2	8.4	8.1	7.0	5.3	4.4	3.3	2.9	2.9	2.3	1.9	2.2	2.1	2.6	2.3	2.8	+0.5
Approx. Wtd. N:	*2700*	*2900*	*3400*	*3100*	*3000*	*3400*	*3400*	*3200*	*3100*	*3100*	*3000*	*3200*	*3200*	*2700*	*2500*	*2500*	*2600*	*2600*	*2500*	*2500*	*2300*	*2500*	

Notes: Level of significance of difference between the two most recent classes: s = .05, ss = .01., sss = .001. '—' indicates data not available.
Any apparent inconsistency between the change estimate and the prevalence estimates for the two most recent classes is due to rounding error.

Source: The Monitoring the Future Study, the University of Michigan.

TABLE E-3
Specific Tranquilizers: Trends in Annual Prevalence of Use for All Seniors

What tranquilizers have you taken during the last year without a doctor's orders?	Percent of ALL SENIORS using drug indicated in past year																						
	Class of 1976	Class of 1977	Class of 1978	Class of 1979	Class of 1980	Class of 1981	Class of 1982	Class of 1983	Class of 1984	Class of 1985	Class of 1986	Class of 1987	Class of 1988	Class of 1989	Class of 1990	Class of 1991	Class of 1992	Class of 1993	Class of 1994	Class of 1995	Class of 1996	Class of 1997	'96–'97 change
Librium	2.6	2.9	2.4	2.1	1.8	2.0	0.9	1.2	0.5	0.8	0.7	0.7	0.3	0.2	0.2	0.2	0.1	0.1	*	0.3	0.3	0.2	0.0
Valium	5.3	6.9	6.0	5.9	5.3	5.5	3.5	3.2	2.9	3.5	2.8	2.9	2.2	1.7	1.6	1.2	1.6	1.6	1.6	1.3	1.5	2.0	+0.5
Miltown	0.2	0.3	0.1	0.3	0.1	0.2	0.1	0.1	0.1	0.1	0.0	0.1	0.0	0.1	0.1	0.0	*	0.0	0.0	0.0	0.1	*	-0.1
Equanil	0.4	0.4	0.7	0.4	0.4	0.2	0.1	0.2	0.1	0.3	0.1	0.1	0.1	0.0	0.1	0.1	*	0.1	*	*	0.2	0.2	-0.1
Meprobamate	0.6	0.2	0.4	0.3	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.2	*	0.1	0.2	*	0.1	0.0	0.1	0.2	0.1	0.3	+0.3
Serax	0.2	0.2	0.1	0.2	0.1	0.2	*	0.1	0.2	0.1	0.2	0.1	0.0	0.1	0.2	0.0	0.2	*	*	*	0.2	0.2	-0.1
Atarax	0.2	0.1	0.1	0.2	0.1	0.3	0.1	0.1	0.1	0.2	0.2	0.2	*	*	0.1	0.1	0.1	0.1	0.0	*	*	0.1	+0.1
Tranxene	0.2	0.3	0.3	0.5	0.3	0.2	0.2	0.3	0.2	0.3	0.2	0.2	0.1	0.1	0.1	0.1	0.2	*	*	0.1	0.1	0.1	0.0
Vistaril	0.1	0.2	0.4	0.3	0.3	0.3	0.1	0.1	0.2	0.4	0.2	0.1	0.0	*	0.3	0.0	*	*	0.1	0.1	0.1	0.2	+0.1
Don't know the names of some tranquilizers I have used	3.0	2.7	2.7	1.9	2.3	1.6	1.3	1.7	1.4	1.7	2.0	1.3	0.9	1.0	1.5	1.1	0.7	1.3	0.9	1.1	1.3	1.5	+0.2
Approx. Wtd. N:	*2700*	*2900*	*3400*	*3100*	*3000*	*3300*	*3400*	*3200*	*3100*	*3100*	*3000*	*3100*	*3200*	*2700*	*2500*	*2400*	*2600*	*2600*	*2500*	*2500*	*2300*	*2500*	

Notes: Level of significance of difference between the two most recent classes: s = .05, ss = .01, sss = .001. '*' indicates less than .05 percent.
Any apparent inconsistency between the change estimate and the prevalence estimates for the two most recent classes is due to rounding error.

Source: The Monitoring the Future Study, the University of Michigan.

TABLE E-4
Specific Opiates Other than Heroin: Trends in Annual Prevalence of Use for All Seniors

What narcotics other than heroin have you taken during the last year without a doctor's orders?	Percent of ALL SENIORS using drug indicated in past year																						
	Class of 1976	Class of 1977	Class of 1978	Class of 1979	Class of 1980	Class of 1981	Class of 1982	Class of 1983	Class of 1984	Class of 1985	Class of 1986	Class of 1987	Class of 1988	Class of 1989	Class of 1990	Class of 1991	Class of 1992	Class of 1993	Class of 1994	Class of 1995	Class of 1996	Class of 1997	'96–'97 change
Methadone	0.6	0.4	0.9	0.9	0.8	0.7	0.4	0.6	0.5	0.5	0.5	0.3	0.1	*	0.5	*	0.3	0.2	0.1	0.1	*	0.4	+0.4s
Opium	2.7	2.4	2.6	3.0	2.8	2.4	1.6	1.2	1.5	1.4	1.5	1.3	0.9	0.9	0.7	0.8	0.5	0.4	0.6	1.0	1.1	1.8	+0.8
Morphine	0.6	0.8	0.7	0.8	1.0	1.1	0.7	0.8	0.8	0.9	0.7	0.4	0.6	0.2	0.7	0.4	0.4	0.2	0.3	0.3	0.6	1.0	+0.4
Codeine	2.5	2.3	3.0	3.4	3.8	4.2	2.6	2.5	3.3	3.3	3.0	2.5	2.2	1.7	2.2	1.8	2.5	1.7	1.6	1.0	2.6	2.5	-0.1
Demerol	0.7	0.6	1.1	0.9	1.2	1.4	0.9	0.9	0.7	0.9	1.0	0.8	0.7	0.4	0.7	0.5	0.9	0.8	0.6	0.4	1.0	1.2	+0.2
Paregoric	0.4	0.3	0.3	0.2	0.4	0.2	0.1	0.3	0.1	0.1	0.1	0.1	*	0.1	0.1	0.1	0.2	0.0	*	0.1	*	0.0	0.0
Talwin	0.1	0.1	0.1	0.2	0.3	0.1	0.3	0.2	0.3	0.1	0.1	0.1	*	*	0.1	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0
Laudanum	0.1	0.0	0.2	0.3	0.2	0.1	0.1	0.2	0.1	0.1	0.1	0.1	*	*	0.1	0.0	*	*	*	0.1	*	0.1	0.0
Other	0.5	0.5	1.4	0.8	0.7	0.6	0.5	0.6	0.4	0.6	0.5	0.4	0.4	0.5	0.5	0.2	0.5	0.3	0.6	0.3	0.7	0.6	0.0
Don't know the names of some I have used	1.1	1.0	0.6	0.9	0.8	0.6	0.7	0.3	0.6	0.6	0.4	0.3	0.5	0.2	0.5	0.3	0.1	0.5	0.4	0.3	0.4	0.5	+0.1
Approx. Wtd. N:	*2700*	*2800*	*3400*	*3000*	*3000*	*3300*	*3400*	*3100*	*3000*	*3100*	*2900*	*3100*	*3100*	*2600*	*2500*	*2400*	*2500*	*2600*	*2500*	*2400*	*2300*	*2400*	

Notes: Level of significance of difference between the two most recent classes: s = .05, ss = .01, sss = .001. '*' indicates less than .05 percent.
Any apparent inconsistency between the change estimate and the prevalence estimates for the two most recent classes is due to rounding error.

Source: The Monitoring the Future Study, the University of Michigan.

APPENDIX F

TABULAR DATA FOR 1996

Because a 1996 volume in this series was not published, this appendix containe the tables and figures that would have been included in the 1996 volume and that report only 1996 data. (Many tables and figures in this series present trends, of course, and thus are superceded by the following year's volume, but some tabular information appears only in one year's volume.) These tables and figures each have a corresponding one for 1997 in the relevant chapter of the present volume.

TABLE 4-1a

Ninety-Five Percent Confidence Limits: Lifetime Prevalence Eighth, Tenth, and Twelfth Graders, 1996

(Approx. Ns: 8th grade = 17,800, 10th grade = 15,600, 12th grade = 14,300)

	8th Grade			10th Grade			12th Grade		
	Lower limit	Observed estimate	Upper limit	Lower limit	Observed estimate	Upper limit	Lower limit	Observed estimate	Upper limit
Any Illicit Drug[a]	29.6	31.2	32.9	43.3	45.4	47.5	48.1	50.8	53.5
Any Illicit Drug[a] Other than Marijuana	17.9	19.2	20.6	23.8	25.5	27.2	26.6	28.5	30.5
Any Illicit Drug[a,b] Including Inhalants	37.7	39.4	41.1	47.7	49.8	51.9	50.6	53.5	56.4
Marijuana/Hashish	21.6	23.1	24.6	37.7	39.8	41.9	42.3	44.9	47.6
Inhalants[b]	19.9	21.2	22.5	18.0	19.3	20.7	15.2	16.6	18.1
Inhalants, Adjusted[b,c]	—	—	—	—	—	—	16.1	17.5	19.0
Amyl & Butyl Nitrites[d]	—	—	—	—	—	—	1.2	1.8	2.7
Hallucinogens	5.1	5.9	6.8	9.4	10.5	11.8	12.6	14.0	15.5
Hallucinogens, Adjusted[c]	—	—	—	—	—	—	13.1	14.5	16.0
LSD	4.4	5.1	6.0	8.3	9.4	10.6	11.3	12.6	14.0
Halluginogens Other than LSD	2.6	3.0	3.5	4.2	4.7	5.3	6.1	6.8	7.5
PCP[d]	—	—	—	—	—	—	3.0	4.0	5.3
Cocaine	3.8	4.5	5.3	5.6	6.5	7.5	6.1	7.1	8.2
Crack	2.6	2.9	3.3	2.9	3.3	3.7	2.9	3.3	3.7
Other Cocaine[e]	3.2	3.8	4.6	4.7	5.5	6.5	5.3	6.4	7.7
Heroin[f]	2.1	2.4	2.7	1.8	2.1	2.4	1.5	1.8	2.1
Other Opiates[g]	—	—	—	—	—	—	7.5	8.2	9.0
Stimulants[g]	12.4	13.5	14.6	16.4	17.7	19.1	14.1	15.3	16.6
Crystal Meth (Ice)[h]	—	—	—	—	—	—	3.6	4.4	5.3
Sedatives[g,i]	—	—	—	—	—	—	7.5	8.2	9.0
Barbiturates[g]	—	—	—	—	—	—	6.9	7.6	8.4
Methaqualone[d,g]	—	—	—	—	—	—	1.3	2.0	3.0
Tranquilizers[g]	4.8	5.3	5.9	6.4	7.1	7.8	6.5	7.2	8.0
Alcohol	53.6	55.3	57.0	70.2	71.8	73.4	77.6	79.2	80.7
Been Drunk[h]	25.3	26.8	28.3	46.7	48.5	50.3	58.6	61.8	64.9
Cigarettes	47.5	49.2	50.9	59.4	61.2	63.0	61.7	63.5	65.3
Smokeless Tobacco[d]	18.5	20.4	22.4	25.2	27.4	29.8	25.7	29.8	34.2
Steroids[h]	1.5	1.8	2.1	1.5	1.8	2.1	1.4	1.9	2.5

NOTE: '—' indicates data not available.
SOURCE: The Monitoring the Future Study, the University of Michigan.

[a] For 12th graders only: Use of "any illicit drugs" includes any use of marijuana, LSD, other hallucinogens, crack, other cocaine, or heroin, or any use of other opiates, stimulants, barbiturates, or tranquilizers not under a doctor's orders. For 8th and 10th graders only: The use of other opiates and barbiturates has been excluded, because these younger respondents appear to overreport use (perhaps because they include the use of nonprescription drugs in their answers).

[b] For 12th graders only: Data based on five of six forms; N is five-sixths of N indicated.

[c] For 12th graders only: Adjusted for underreporting of certain drugs. See text for details.

[d] For 8th and 10th graders only: Data based on one of two forms; N is one-half of N indicated. For 12th graders only: Data based on one of six forms. N is one-sixth of N indicated.

[e] For 12th graders only: Data based on four of six forms; N is four-sixths of N indicated.

[f] In 1995, the heroin question was changed in three of six forms for 12th graders and in one of two forms for 8th and 10th graders. Separate questions were asked for use with injection and without injection. Data presented here represent the combined data from all forms. In 1996, the heroin question was changed in the remaining 8th and 10th grade form.

[g] Only drug use which was not under a doctor's orders is included here.

[h] For 12th graders only: Data based on two of six forms; N is two-sixths of N indicated.

[i] For 12th graders only: Data based on six forms adjusted by one form data.

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TABLE 4-1b

Ninety-Five Percent Confidence Limits: Annual Prevalence Eighth, Tenth, and Twelfth Graders, 1996

(Approx. Ns: 8th grade = 17,800, 10th grade = 15,600, 12th grade = 14,300)

	8th Grade			10th Grade			12th Grade		
	Lower limit	Observed estimate	Upper limit	Lower limit	Observed estimate	Upper limit	Lower limit	Observed estimate	Upper limit
Any Illicit Drug[a]	22.3	23.6	25.0	35.6	37.5	39.4	37.7	40.2	42.8
Any Illicit Drug[a] Other than Marijuana	12.1	13.1	14.2	17.1	18.4	19.8	18.2	19.8	21.5
Any Illicit Drug[a,b] Including Inhalants	27.3	28.7	30.2	37.7	39.6	41.5	39.1	41.9	44.7
Marijuana/Hashish	17.1	18.3	19.6	31.8	33.6	35.5	33.3	35.8	38.3
Inhalants[b]	11.3	12.2	13.2	8.6	9.5	10.5	6.7	7.6	8.6
Inhalants, Adjusted[b,c]	—	—	—	—	—	—	7.6	8.5	9.6
Amyl & Butyl Nitrites[d]	—	—	—	—	—	—	1.1	1.6	2.3
Hallucinogens	3.5	4.1	4.8	6.9	7.8	8.8	9.1	10.1	11.2
Hallucinogens, Adjusted[c]	—	—	—	—	—	—	9.6	10.7	11.9
LSD	2.9	3.5	4.1	6.1	6.9	7.8	7.8	8.8	9.9
Halluginogens Other than LSD	1.7	2.0	2.4	2.9	3.3	3.8	3.9	4.4	5.0
PCP[d]	—	—	—	—	—	—	1.9	2.6	3.5
Cocaine	2.5	3.0	3.6	3.6	4.2	5.0	4.2	4.9	5.7
Crack	1.6	1.8	2.1	1.8	2.1	2.4	1.8	2.1	2.4
Other Cocaine[e]	2.0	2.5	3.1	2.9	3.5	4.2	3.4	4.2	5.2
Heroin[f]	1.4	1.6	1.8	1.0	1.2	1.4	0.8	1.0	1.2
Other Opiates[g]	—	—	—	—	—	—	4.8	5.4	6.0
Stimulants[g]	8.3	9.1	10.0	11.4	12.4	13.5	8.6	9.5	10.5
Crystal Meth. (Ice)[h]	—	—	—	—	—	—	2.3	2.8	3.4
Sedatives[g,i]	—	—	—	—	—	—	4.7	5.3	5.9
Barbiturates[g]	—	—	—	—	—	—	4.4	4.9	5.5
Methaqualone[d,g]	—	—	—	—	—	—	0.7	1.1	1.7
Tranquilizers[g]	2.9	3.3	3.8	4.1	4.6	5.2	4.1	4.6	5.2
Alcohol	44.8	46.5	48.2	63.3	65.0	66.7	70.8	72.5	74.1
Been Drunk[h]	18.5	19.8	21.2	38.4	40.1	41.9	48.7	51.9	55.1
Cigarettes	—	—	—	—	—	—	—	—	—
Smokeless Tobacco[d]	—	—	—	—	—	—	—	—	—
Steroids[h]	0.7	0.9	1.1	1.0	1.2	1.4	1.0	1.4	1.9

NOTE: '—' indicates data not available.
SOURCE: The Monitoring the Future Study, the University of Michigan.

[a] For 12th graders only: Use of "any illicit drugs" includes any use of marijuana, LSD, other hallucinogens, crack, other cocaine, or heroin, or any use of other opiates, stimulants, barbiturates, or tranquilizers not under a doctor's orders. For 8th and 10th graders only: The use of other opiates and barbiturates has been excluded, because these younger respondents appear to overreport use (perhaps because they include the use of nonprescription drugs in their answers).

[b] For 12th graders only: Data based on five of six forms; N is five-sixths of N indicated.

[c] For 12th graders only: Adjusted for underreporting of certain drugs. See text for details.

[d] For 8th and 10th graders only: Data based on one of two forms; N is one-half of N indicated. For 12th graders only: Data based on one of six forms. N is one-sixth of N indicated.

[e] For 12th graders only: Data based on four of six forms; N is four-sixths of N indicated.

[f] In 1995, the heroin question was changed in three of six forms for 12th graders and in one of two forms for 8th and 10th graders. Separate questions were asked for use with injection and without injection. Data presented here represent the combined data from all forms. In 1996, the heroin question was changed in the remaining 8th and 10th grade form.

[g] Only drug use which was not under a doctor's orders is included here.

[h] For 12th graders only: Data based on two of six forms; N is two-sixths of N indicated.

[i] For 12th graders only: Data based on six forms adjusted by one form data.

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TABLE 4-1c

Ninety-Five Percent Confidence Limits: Thirty-Day Prevalence Eighth, Tenth, and Twelfth Graders, 1996

(Approx. Ns: 8th grade = 17,800, 10th grade = 15,600, 12th grade = 14,300)

	8th Grade			10th Grade			12th Grade		
	Lower limit	Observed estimate	Upper limit	Lower limit	Observed estimate	Upper limit	Lower limit	Observed estimate	Upper limit
Any Illicit Drug[a]	13.6	14.6	15.7	21.8	23.2	24.7	22.7	24.6	26.7
Any Illicit Drug[a] Other than Marijuana	6.3	6.9	7.6	8.1	8.9	9.8	8.5	9.5	10.6
Any Illicit Drug[a,b] Including Inhalants	16.4	17.5	18.7	23.1	24.5	26.0	23.3	25.5	27.8
Marijuana/Hashish	10.4	11.3	12.3	19.1	20.4	21.8	20.0	21.9	23.9
Inhalants[b]	5.3	5.8	6.4	2.9	3.3	3.8	2.1	2.5	3.0
Inhalants, Adjusted[b,c]	—	—	—	—	—	—	2.5	2.9	3.4
Amyl & Butyl Nitrites[d]	—	—	—	—	—	—	0.4	0.7	1.2
Hallucinogens	1.6	1.9	2.3	2.4	2.8	3.3	3.0	3.5	4.1
Hallucinogens, Adjusted[c]	—	—	—	—	—	—	3.3	3.8	4.4
LSD	1.2	1.5	1.9	2.0	2.4	2.9	2.1	2.5	3.0
Halluginogens Other than LSD	0.7	0.9	1.1	0.8	1.0	1.2	1.4	1.6	1.9
PCP[d]	—	—	—	—	—	—	0.8	1.3	2.0
Cocaine	1.0	1.3	1.6	1.4	1.7	2.1	1.6	2.0	2.5
Crack	0.7	0.8	1.0	0.6	0.8	1.0	0.8	1.0	1.2
Other Cocaine[e]	0.8	1.0	1.3	1.0	1.3	1.7	1.2	1.6	2.1
Heroin[f]	0.6	0.7	0.9	0.4	0.5	0.7	0.4	0.5	0.7
Other Opiates[g]	—	—	—	—	—	—	1.7	2.0	2.3
Stimulants[g]	4.1	4.6	5.1	5.0	5.5	6.1	3.6	4.1	4.6
Crystal Meth (Ice)[h]	—	—	—	—	—	—	0.8	1.1	1.5
Sedatives[g,i]	—	—	—	—	—	—	2.0	2.3	2.6
Barbiturates[g]	—	—	—	—	—	—	1.8	2.1	2.4
Methaqualone[d,g]	—	—	—	—	—	—	0.3	0.6	1.1
Tranquilizers[g]	1.3	1.5	1.8	1.5	1.7	2.0	1.7	2.0	2.3
Alcohol	24.8	26.2	27.7	38.7	40.4	42.2	48.9	50.8	52.7
Been Drunk[h]	8.7	9.6	10.6	19.9	21.3	22.8	28.4	31.3	34.4
Cigarettes	19.6	21.0	22.4	28.7	30.4	32.1	32.2	34.0	35.8
Smokeless Tobacco[d]	6.0	7.1	8.4	7.3	8.6	10.2	7.4	9.8	12.9
Steroids[h]	0.3	0.4	0.5	0.4	0.5	0.7	0.5	0.7	1.1

NOTE: '—' indicates data not available.
SOURCE: The Monitoring the Future Study, the University of Michigan.

[a] For 12th graders only: Use of "any illicit drugs" includes any use of marijuana, LSD, other hallucinogens, crack, other cocaine, or heroin, or any use of other opiates, stimulants, barbiturates, or tranquilizers not under a doctor's orders. For 8th and 10th graders only: The use of other opiates and barbiturates has been excluded, because these younger respondents appear to overreport use (perhaps because they include the use of nonprescription drugs in their answers).
[b] For 12th graders only: Data based on five of six forms: N is five-sixths of N indicated.
[c] For 12th graders only: Adjusted for underreporting of certain drugs. See text for details.
[d] For 8th and 10th graders only: Data based on one of two forms; N is one-half of N indicated. For 12th graders only: Data based on one of six forms. N is one-sixth of N indicated.
[e] For 12th graders only: Data based on four of six forms: N is four-sixths of N indicated.
[f] In 1995, the heroin question was changed in three of six forms for 12th graders and in one of two forms for 8th and 10th graders. Separate questions were asked for use with injection and without injection. Data presented here represent the combined data from all forms. In 1996, the heroin question was changed in the remaining 8th and 10th grade form.
[g] Only drug use which was not under a doctor's orders is included here.
[h] For 12th graders only: Data based on two of six forms: N is two-sixths of N indicated.
[i] For 12th graders only: Data based on six forms adjusted by one form data.

TABLE 4-1d

Ninety-Five Percent Confidence Limits: Daily Prevalence Eighth, Tenth, and Twelfth Graders, 1996

(Approx. Ns: 8th grade = 17,800, 10th grade = 15,600, 12th grade = 14,300)

	8th Grade			10th Grade			12th Grade		
	Lower limit	Observed estimate	Upper limit	Lower limit	Observed estimate	Upper limit	Lower limit	Observed estimate	Upper limit
Marijuana/Hashish	1.3	1.5	1.7	3.1	3.5	3.9	4.3	4.9	5.6
Alcohol									
Daily	0.8	1.0	1.2	1.4	1.6	1.9	3.4	3.7	4.1
5+ drinks in last 2 weeks	14.4	15.6	16.9	23.3	24.8	26.4	28.5	30.2	31.9
Cigarettes									
Daily	9.4	10.4	11.5	16.9	18.3	19.8	20.7	22.2	23.8
1/2 pack+/day	3.7	4.3	4.9	8.5	9.4	10.3	12.0	13.0	14.1
Smokeless Tobacco[a]	1.0	1.5	2.2	1.5	2.2	3.1	2.0	3.3	5.5

NOTE: '—' indicates data not available.
SOURCE: The Monitoring the Future Study, the University of Michigan.

[a] For 8th and 10th graders only: Data based on one of two forms; N is one-half of N indicated. For 12th graders only: Data based on one of six forms. N is one-sixth of N indicated.

TABLE 4-2

A Comparison of Drug Usage Rates
Eighth, Tenth, and Twelfth Graders, 1996

	Lifetime			Annual			30-Day			Daily		
Grade	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th
Approx. N =	*17800*	*15600*	*14300*	*17800*	*15600*	*14300*	*17800*	*15600*	*14300*	*17800*	*15600*	*14300*
Any Illicit Drug[a]	31.2	45.4	50.8	23.6	37.5	40.2	14.6	23.2	24.6	—	—	—
Any Illicit Drug[a] Other Than Marijuana	19.2	25.5	28.5	13.1	18.4	19.8	6.9	8.9	9.5	—	—	—
Any Illicit Drug[a,b] Including Inhalants	39.4	49.8	53.5	28.7	39.6	41.9	17.5	24.5	25.5	—	—	—
Marijuana/Hashish	23.1	39.8	44.9	18.3	33.6	35.8	11.3	20.4	21.9	1.5	3.5	4.9
Inhalants[b]	21.2	19.3	16.6	12.2	9.5	7.6	5.8	3.3	2.5	0.2	0.1	0.2
Inhalants, Adjusted[b,c]	—	—	17.5	—	—	8.5	—	—	2.9	—	—	—
Amyl/Butyl Nitrites[d]	—	—	1.8	—	—	1.6	—	—	0.7	—	—	0.4
Hallucinogens	5.9	10.5	14.0	4.1	7.8	10.1	1.9	2.8	3.5	0.1	*	0.1
Hallucinogens, Adjusted[c]	—	—	14.5	—	—	10.7	—	—	3.8	—	—	—
LSD	5.1	9.4	12.6	3.5	6.9	8.8	1.5	2.4	2.5	*	*	*
Hallucinogens Other than LSD	3.0	4.7	6.8	2.0	3.3	4.4	0.9	1.0	1.6	*	*	0.1
PCP[d]	—	—	4.0	—	—	2.6	—	—	1.3	—	—	0.3
Cocaine	4.5	6.5	7.1	3.0	4.2	4.9	1.3	1.7	2.0	0.1	0.1	0.2
Crack	2.9	3.3	3.3	1.8	2.1	2.1	0.8	0.8	1.0	*	*	0.2
Other Cocaine[e]	3.8	5.5	6.4	2.5	3.5	4.2	1.0	1.3	1.6	*	*	0.1
Heroin[f]	2.4	2.1	1.8	1.6	1.2	1.0	0.7	0.5	0.5	*	*	0.1
Other Opiates[g]	—	—	8.2	—	—	5.4	—	—	2.0	—	—	0.2
Stimulants[g]	13.5	17.7	15.3	9.1	12.4	9.5	4.6	5.5	4.1	0.1	0.1	0.3
Crystal Meth. (Ice)[h]	—	—	4.4	—	—	2.8	—	—	1.1	—	—	0.1
Sedatives[g,i]	—	—	8.2	—	—	5.3	—	—	2.3	—	—	—
Barbiturates[g]	—	—	7.6	—	—	4.9	—	—	2.1	—	—	0.1
Methaqualone[d,g]	—	—	2.0	—	—	1.1	—	—	0.6	—	—	0.0
Tranquilizers[g]	5.3	7.1	7.2	3.3	4.6	4.6	1.5	1.7	2.0	*	*	0.2
Alcohol												
Any use	55.3	71.8	79.2	46.5	65.0	72.5	26.2	40.4	50.8	1.0	1.6	3.7
Been Drunk[h]	26.8	48.5	61.8	19.8	40.1	51.9	9.6	21.3	31.3	0.2	0.4	1.6
5+ drinks in last 2 weeks	—	—	—	—	—	—	—	—	—	15.6	24.8	30.2
Cigarettes												
Any use	49.2	61.2	63.5	—	—	—	21.0	30.4	34.0	10.4	18.3	22.2
1/2 pack+/day	—	—	—	—	—	—	—	—	—	4.3	9.4	13.0
Smokeless Tobacco[d]	20.4	27.4	29.8	—	—	—	7.1	8.6	9.8	1.5	2.2	3.3
Steroids[b]	1.8	1.8	1.9	0.9	1.2	1.4	0.4	0.5	0.7	*	*	0.3

NOTES: '—' indicates data not available. '*' indicates less than .05 percent.
SOURCE: The Monitoring the Future Study, the University of Michigan.

[a] For 12th graders only: Use of "any illicit drugs" includes any use of marijuana, LSD, other hallucinogens, crack, other cocaine, or heroin or any use of other opiates, stimulants, barbiturates, or tranquilizers not under a doctor's orders. For 8th and 10th graders only: The use of other opiates and barbiturates has been excluded, because these younger respondents appear to overreport use (perhaps because they include the use of nonprescription drugs in their answers).

[b] For 12th graders only: Data based on five of six forms: N is five-sixths of N indicated.

[c] For 12th graders only: Adjusted for underreporting of certain drugs. See text for details.

[d] For 8th and 10th graders only: Data based on one of two forms: N is one-half of N indicated. For 12th graders only: Data based on one of six forms. N is one-sixth of N indicated.

[e] For 12th graders only: Data based on four of six forms: N is four-sixths of N indicated.

[f] In 1995, the heroin question was changed in three of six forms for 12th graders and in one of two forms for 8th and 10th graders. Separate questions were asked for use with injection and without injection. Data presented here represent the combined data from all forms. In 1996, the heroin question was changed in the remaining 8th and 10th grade form.

[g] Only drug use which was not under a doctor's orders is included here.

[h] For 12th graders only: Data based on two of six forms: N is two-sixths of N indicated.

[i] For 12th graders only: Data based on six forms adjusted by one form data.

TABLE 4-4a

Frequency of Use of Various Types of Drugs: Lifetime, Annual, and Thirty-Day Eighth, Tenth, and Twelfth Graders, 1996

(Entries are percentages)

	Marijuana			Inhalants[a,b]			Amyl/Butyl[c] Nitrites			Hallucinogens[d]			LSD			PCP[e]		
Grade:	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th
Approx. N =	17800	15600	14300	17800	15600	11900	—	—	2400	17800	15600	14300	17800	15600	14300	—	—	2400
Lifetime Frequency																		
No occasions	76.9	60.3	55.1	78.8	80.7	83.4	—	—	98.2	94.1	89.5	86.0	94.9	90.6	87.4	—	—	96.0
1-2 occasions	7.7	9.6	9.4	12.4	10.8	8.4	—	—	0.6	2.8	4.5	5.1	3.1	4.9	5.4	—	—	2.1
3-5 occasions	3.5	5.7	5.4	3.8	4.1	3.3	—	—	0.3	1.5	2.7	3.4	0.8	1.7	2.4	—	—	0.8
6-9 occasions	2.5	3.7	4.5	1.9	1.7	1.8	—	—	*	0.5	0.9	1.4	0.5	0.9	1.4	—	—	0.3
10-19 occasions	2.8	5.0	5.5	1.3	1.3	1.6	—	—	0.3	0.5	1.2	1.9	0.3	0.9	1.5	—	—	0.1
20-39 occasions	2.1	4.4	5.1	0.8	0.6	0.7	—	—	0.1	0.2	0.5	0.8	0.2	0.5	0.9	—	—	0.1
40 or more	4.5	11.4	15.0	1.0	0.8	0.9	—	—	0.5	0.4	0.7	1.4	0.2	0.5	1.0	—	—	0.6
Annual Frequency																		
No occasions	81.7	66.4	64.2	87.8	90.5	92.4	—	—	98.4	95.9	92.2	89.9	96.5	93.1	91.2	—	—	97.4
1-2 occasions	6.4	9.4	9.4	7.4	5.8	4.0	—	—	0.6	2.1	3.7	4.6	2.2	4.0	4.6	—	—	1.3
3-5 occasions	3.3	5.4	5.6	2.4	1.8	1.5	—	—	0.2	1.1	2.2	2.6	0.6	1.4	1.9	—	—	0.5
6-9 occasions	2.5	4.0	4.3	1.0	0.9	0.9	—	—	0.2	0.4	0.7	1.1	0.4	0.7	1.0	—	—	0.3
10-19 occasions	2.5	4.5	4.5	0.8	0.5	0.5	—	—	0.1	0.3	0.7	1.0	0.2	0.5	0.7	—	—	0.1
20-39 occasions	1.5	3.7	3.3	0.4	0.3	0.3	—	—	*	0.1	0.2	0.3	0.1	0.2	0.3	—	—	0.0
40 or more	2.1	6.5	8.8	0.2	0.2	0.4	—	—	0.4	0.1	0.2	0.4	0.1	0.1	0.3	—	—	0.3
30-Day Frequency																		
No occasions	88.7	79.6	78.1	94.2	96.7	97.5	—	—	99.3	98.2	97.2	96.5	98.5	97.6	97.5	—	—	98.7
1-2 occasions	4.8	7.3	7.8	3.8	2.2	1.5	—	—	0.1	1.0	1.8	2.4	1.0	1.8	1.8	—	—	0.5
3-5 occasions	2.2	3.9	3.7	1.0	0.6	0.4	—	—	0.1	0.5	0.7	0.8	0.2	0.4	0.4	—	—	0.2
6-9 occasions	1.6	2.7	2.6	0.5	0.3	0.2	—	—	0.0	0.2	0.2	0.2	0.2	0.1	0.1	—	—	0.2
10-19 occasions	1.2	3.1	3.0	0.3	0.2	0.2	—	—	0.1	0.1	0.1	0.1	0.1	0.1	0.1	—	—	*
20-39 occasions	0.8	1.9	2.3	0.1	*	0.1	—	—	0.1	0.0	*	0.1	*	*	*	—	—	0.1
40 or more	0.7	1.7	2.6	0.1	0.1	0.1	—	—	0.3	0.1	*	0.1	*	*	*	—	—	0.3

SOURCE: The Monitoring the Future Study, the University of Michigan.

(Table continued on next page)

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TABLE 4-4a (cont.)

Frequency of Use of Various Types of Drugs: Lifetime, Annual, and Thirty-Day Eighth, Tenth, and Twelfth Graders, 1996

(Entries are percentages)

	Cocaine			Crack			Other Cocaine[d]			Heroin[e]			Other Opiates			Stimulants[f,g]		
Grade	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th
Approx. N =	17800	15600	14300	17800	15600	14300	17800	15600	9500	17800	15600	14300	—	—	14300	17800	15600	14300
Lifetime Frequency																		
No occasions	95.5	93.5	93.0	97.1	96.7	96.7	96.3	94.5	93.6	97.6	97.9	98.2	—	—	91.8	86.5	82.3	84.7
1-2 occasions	1.8	2.9	3.0	1.8	1.9	1.6	2.2	3.1	3.1	1.3	1.1	1.0	—	—	3.8	7.1	7.9	6.4
3-5 occasions	1.5	1.5	1.4	0.5	0.5	0.5	0.7	0.9	1.1	0.5	0.5	0.3	—	—	1.6	2.6	3.8	2.9
6-9 occasions	0.3	0.6	0.7	0.2	0.3	0.4	0.3	0.5	0.6	0.2	0.2	0.1	—	—	1.0	1.3	2.0	1.7
10-19 occasions	0.4	0.7	0.8	0.1	0.3	0.3	0.2	0.4	0.5	0.2	0.1	0.1	—	—	0.7	1.2	1.8	1.8
20-39 occasions	0.1	0.2	0.5	0.1	0.1	0.1	0.2	0.2	0.5	0.1	0.1	0.1	—	—	0.4	0.6	1.0	0.9
40 or more	0.4	0.6	0.8	0.2	0.3	0.4	0.2	0.4	0.5	0.2	0.2	0.3	—	—	0.7	0.8	1.4	1.7
Annual Frequency																		
No occasions	97.0	95.8	95.1	98.2	97.9	97.9	97.5	96.5	95.8	98.5	98.8	99.0	—	—	91.6	90.9	87.6	90.5
1-2 occasions	1.3	2.0	2.2	1.2	1.2	1.0	1.6	2.0	2.1	0.8	0.6	0.5	—	—	2.8	5.2	6.2	4.3
3-5 occasions	1.0	1.0	1.1	0.3	0.4	0.5	0.4	0.6	0.8	0.3	0.3	0.2	—	—	1.0	1.6	2.6	1.9
6-9 occasions	0.2	0.5	0.4	0.1	0.2	0.3	0.2	0.4	0.5	0.1	0.1	0.1	—	—	0.6	1.0	1.4	0.9
10-19 occasions	0.2	0.4	0.6	0.1	0.2	0.2	0.2	0.2	0.4	0.2	0.1	0.1	—	—	0.5	0.9	1.2	1.0
20-39 occasions	0.1	0.2	0.3	0.1	0.1	0.1	0.1	0.1	0.2	0.1	0.1	0.1	—	—	0.3	0.4	0.5	0.7
40 or more	0.2	0.3	0.3	*	0.1	0.2	*	0.2	0.2	0.1	*	0.1	—	—	0.3	0.2	0.5	0.6
30-Day Frequency																		
No occasions	98.7	98.3	98.0	99.2	99.2	99.0	99.0	98.7	98.4	99.3	99.5	99.5	—	—	98.0	95.4	94.5	95.9
1-2 occasions	0.6	0.9	0.9	0.6	0.5	0.5	0.6	0.9	0.9	0.4	0.3	0.2	—	—	1.1	2.8	3.3	2.1
3-5 occasions	0.4	0.4	0.5	0.1	0.1	0.2	0.2	0.2	0.3	0.2	0.1	0.1	—	—	0.3	0.8	1.2	0.8
6-9 occasions	0.1	0.1	0.2	0.1	0.1	0.1	0.1	0.1	0.2	0.1	*	*	—	—	0.2	0.6	0.5	0.4
10-19 occasions	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	*	0.1	—	—	0.2	0.3	0.4	0.5
20-39 occasions	*	0.1	0.1	*	*	0.1	*	*	*	*	*	0.1	—	—	0.1	0.1	0.1	0.2
40 or more	*	*	0.2	*	*	0.1	*	*	0.1	*	*	0.1	—	—	0.1	*	*	0.2

SOURCE: The Monitoring the Future Study, the University of Michigan.

(Table continued on next page)

TABLE 4-4a (cont.)

Frequency of Use of Various Types of Drugs: Lifetime, Annual, and Thirty-Day Eighth, Tenth, and Twelfth Graders, 1996

(Entries are percentages)

	Crystal Meth. (Ice)[h]			Barbiturates[g]			Tranquilizers[g]			Alcohol			Been Drunk[h]			Steroids[h]		
Grade	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th
Approx. N	—	—	4800	—	—	14300	17800	15600	14300	17800	15600	14300	17800	15600	4800	17800	15600	4800
Lifetime Frequency																		
No occasions	—	—	95.6	—	—	92.4	94.8	92.9	92.8	44.7	28.2	20.8	73.2	51.5	38.2	98.2	98.2	98.1
1-2 occasions	—	—	2.3	—	—	3.2	3.1	3.8	3.7	13.3	10.9	8.1	13.1	17.1	14.4	1.1	1.0	0.8
3-5 occasions	—	—	0.7	—	—	1.6	0.9	1.6	1.3	11.2	12.2	10.5	5.0	9.4	11.7	0.2	0.3	0.2
6-9 occasions	—	—	0.5	—	—	0.8	0.4	0.6	0.6	8.6	10.8	9.1	2.9	6.4	7.1	0.1	0.2	0.2
10-19 occasions	—	—	0.4	—	—	0.8	0.3	0.5	0.6	8.5	12.8	12.2	2.6	6.2	8.1	0.1	0.2	0.2
20-39 occasions	—	—	0.2	—	—	0.3	0.2	0.4	0.4	5.6	9.8	12.3	1.6	4.6	7.2	0.1	0.1	0.2
40 or more	—	—	0.4	—	—	0.8	0.3	0.2	0.6	8.1	15.3	26.9	1.6	4.8	13.3	0.1	0.2	0.4
Annual Frequency																		
No occasions	—	—	97.2	—	—	95.1	96.7	95.4	95.4	53.5	35.0	27.5	80.2	59.9	48.1	99.1	98.9	98.7
1-2 occasions	—	—	1.4	—	—	2.4	2.0	2.6	2.5	18.5	19.1	16.1	11.2	17.9	17.4	0.6	0.6	0.6
3-5 occasions	—	—	0.4	—	—	1.0	0.6	1.0	0.7	11.1	14.4	13.0	3.9	8.2	9.0	0.1	0.2	0.1
6-9 occasions	—	—	0.3	—	—	0.6	0.3	0.4	0.5	7.0	10.1	10.5	2.1	5.4	7.1	0.1	0.1	0.1
10-19 occasions	—	—	0.3	—	—	0.4	0.2	0.4	0.4	5.3	10.8	13.0	1.5	4.5	7.7	0.1	0.1	0.1
20-39 occasions	—	—	0.2	—	—	0.3	0.2	0.2	0.1	2.7	5.6	8.8	0.7	2.2	4.9	*	0.1	0.1
40 or more	—	—	0.2	—	—	0.3	0.1	0.1	0.3	2.0	5.0	11.2	0.4	1.8	5.8	*	0.1	0.3
30-Day Frequency																		
No occasions	—	—	98.9	—	—	97.9	98.5	98.3	98.0	73.8	59.6	49.2	90.4	78.7	68.7	99.6	99.5	99.3
1-2 occasions	—	—	0.4	—	—	1.2	1.0	1.1	1.1	14.7	20.1	20.3	6.3	12.7	14.8	0.3	0.3	0.2
3-5 occasions	—	—	0.1	—	—	0.3	0.3	0.4	0.4	5.9	9.9	13.2	1.8	4.7	7.2	0.1	0.1	*
6-9 occasions	—	—	0.4	—	—	0.2	0.1	0.2	0.2	3.0	5.5	8.2	0.9	2.3	4.6	0.1	0.1	0.1
10-19 occasions	—	—	0.1	—	—	0.3	0.1	0.1	0.1	1.6	3.3	5.5	0.5	1.2	3.2	*	0.1	0.1
20-39 occasions	—	—	*	—	—	0.1	*	*	0.1	0.7	0.9	1.7	0.1	0.2	1.0	*	*	*
40 or more	—	—	0.1	—	—	*	*	*	0.1	0.4	0.7	2.0	0.1	0.2	0.7	*	*	0.3

NOTES: '—' indicates data not available. '*' indicates less than .05 percent.
SOURCE: The Monitoring the Future Study, the University of Michigan.

[a] Unadjusted for known underreporting of certain drugs. See text for details.
[b] 12th grade only: Data based on five of six forms.
[c] 12th grade only: Data based on one of six forms.
[d] 12th grade only: Data based on four of six forms.
[e] In 1995, the heroin question was changed in three of six forms for 12th graders and in one of two forms for 8th and 10th graders. Separate questions were asked for use with injection and without injection. Data presented here represent the combined data from all forms. In 1996, the heroin question was changed in the remaining 8th and 10th grade form.
[f] Based on the data from the revised question, which attempts to exclude the inappropriate reporting of non-prescription stimulants.
[g] Only drug use which was not under a doctor's orders is included here.
[h] 12th grade only: Data based on two of six forms.

TABLE 4-4b

Frequency of Occasions of Heavy Drinking, and Cigarette and Smokeless Tobacco Use Eighth, Tenth, and Twelfth Graders, 1996

(Entries are percentages)

	Percent who used		
	8th Grade	10th Grade	12th Grade
Q *Think back over the LAST TWO WEEKS. How many times have you had five or more drinks in a row?*			
None	84.4	75.2	69.8
Once	6.4	9.6	9.8
Twice	3.9	6.4	8.0
3 to 5 times	3.4	5.8	8.3
6 to 9 times	1.1	1.5	2.5
10 or more times	0.9	1.4	1.7
Approx. N =	17800	15600	14300
Q *Have you ever smoked cigarettes?*			
Never	50.8	38.8	36.5
Once or twice	23.5	23.1	22.2
Occasionally but not regularly	11.9	15.8	16.2
Regularly in the past	6.1	7.8	7.1
Regularly now	7.6	14.6	18.0
Approx. N =	17800	15600	14300
Q *How frequently have you smoked cigarettes during the past 30 days?*			
Not at all (includes "never" category from question above)	79.0	69.6	66.0
Less than one cigarette per day	10.6	12.1	11.8
One to five cigarettes per day	6.2	8.9	9.3
About one-half pack per day	2.3	5.2	6.5
About one pack per day	1.1	3.0	5.0
About one and one-half packs per day	0.5	0.8	1.1
Two packs or more per day	0.4	0.4	0.4
Approx. N =	17800	15600	14300
Q *Have you ever taken or used smokeless tobacco (snuff, plug, dipping tobacco, chewing tobacco)?*			
Never	79.6	72.7	70.2
Once or twice	13.0	16.0	17.2
Occasionally but not regularly	4.2	6.3	6.1
Regularly in the past	1.5	2.7	3.5
Regularly now	1.8	2.4	3.0
Approx. N =	8900	7800	2400
Q *How frequently have you taken smokeless tobacco during the past 30 days?*			
Not at all (includes "never" category from question above)	92.9	91.4	90.2
Once or twice	4.0	4.4	4.4
Once or twice per week	1.0	1.2	1.0
Three to five times per week	0.6	0.8	1.1
About once a day	0.4	0.6	0.7
More than once a day	1.2	1.6	2.6
Approx. N =	8900	7800	2400

SOURCE: The Monitoring the Future Study, the University of Michigan.

TABLE 4-5

Lifetime Prevalence of Use of Various Types of Drugs by Subgroups, Twelfth Graders, 1996

(Entries are percentages)

	Marijuana	Inhalants[a]	Amyl/Butyl Nitrites	Hallucinogens[a]	LSD	PCP	Cocaine	Crack	Other Cocaine	Heroin[b]	Other Opiates[c]	Stimulants[c]	Crystal Meth. (Ice)	Sedatives[c]	Barbiturates[c]	Methaqualone[c]	Tranquilizers[c]	Alcohol	Been Drunk	Cigarettes	Smokeless	Steroids
Total	44.9	16.6	1.8	14.0	12.6	4.0	7.1	3.3	6.1	1.8	8.2	15.3	4.4	8.2	7.6	2.0	7.2	79.2	61.8	63.5	29.8	1.9
Sex:																						
Male	48.6	19.3	2.3	16.6	15.0	4.6	8.4	4.0	7.6	2.4	9.3	14.6	5.6	8.7	8.1	2.3	7.6	78.8	63.1	64.4	48.8	3.2
Female	40.7	14.2	1.2	10.8	9.8	3.4	5.4	2.4	4.8	1.2	7.1	15.3	3.2	7.5	6.8	1.1	6.6	79.4	60.0	62.2	12.4	0.6
College Plans:																						
None or under 4 yrs	53.1	20.2	2.3	17.3	16.3	5.5	10.5	6.0	8.8	2.9	10.3	21.3	6.9	11.5	10.6	2.6	9.0	83.3	63.7	73.0	37.1	3.5
Complete 4 yrs	41.8	15.5	1.6	12.4	11.0	3.6	5.8	2.4	5.3	1.5	7.5	13.4	3.6	7.1	6.6	1.3	6.6	78.0	60.6	60.8	28.2	1.6
Region:																						
Northeast	48.9	20.2	2.9	17.6	15.7	5.7	7.8	3.1	7.2	2.4	9.2	15.6	5.2	8.9	8.3	1.4	7.8	82.5	65.4	66.4	25.2	1.9
North Central	45.4	16.5	1.2	12.0	10.9	3.7	5.9	3.4	5.5	1.3	8.8	16.0	3.3	8.6	7.6	1.9	6.5	81.0	64.1	64.4	31.7	2.9
South	41.9	15.2	2.6	12.5	11.4	3.3	6.6	2.8	6.0	2.0	7.8	15.1	3.4	8.5	8.0	2.6	8.0	79.3	60.6	64.3	33.0	1.7
West	45.3	15.3	0.3	15.5	13.8	3.9	9.0	1.1	7.5	1.5	7.0	14.3	7.1	6.1	5.8	1.6	5.8	71.8	56.5	56.5	25.9	1.1
Population Density:																						
Large MSA	46.4	17.0	1.9	14.1	12.8	6.0	7.0	3.3	6.4	2.0	7.5	12.4	6.9	6.3	5.8	1.2	5.9	80.6	62.1	62.1	24.8	2.4
Other MSA	47.8	16.3	2.1	15.7	14.2	3.5	7.2	2.9	6.6	1.9	8.3	14.7	3.2	8.7	8.2	2.3	7.6	77.3	61.3	62.0	27.0	1.7
Non-MSA	38.2	16.9	1.4	10.7	9.4	3.2	6.9	3.8	6.0	1.5	8.8	18.9	4.3	8.9	8.0	2.1	7.4	81.4	62.4	67.3	39.6	2.0
Parental Education[d]																						
1.0-2.0 (Low)	42.1	14.2	2.0	10.9	10.1	3.9	8.1	5.0	7.5	2.2	6.3	15.2	4.6	8.2	8.2	0.9	6.6	73.3	50.1	62.4	20.8	2.0
2.5-3.0	44.8	16.2	0.9	12.7	11.8	3.3	7.4	3.7	6.0	1.4	8.1	17.2	4.3	8.0	7.8	1.2	6.3	79.7	62.5	65.0	31.0	2.8
3.5-4.0	45.0	17.1	1.9	14.1	12.8	5.5	7.1	3.4	6.7	1.9	8.4	15.2	4.1	8.1	7.8	1.0	7.5	81.2	62.6	64.8	27.9	1.7
4.5-5.0	45.5	16.2	2.0	14.5	12.9	3.1	6.5	2.5	5.7	1.8	8.3	14.4	4.2	8.2	7.2	1.6	7.4	79.0	63.6	62.1	34.5	1.7
5.5-6.0 (High)	44.2	18.6	3.0	15.3	13.1	4.4	6.6	2.5	6.3	1.7	9.3	13.4	5.2	8.4	6.8	3.5	7.8	78.2	61.0	62.0	28.7	1.5

NOTES: '—' indicates data not available.
Prevalence of use of each drug was included in all six questionnaire forms with the following exceptions: inhalants was in five forms; other cocaine was in four forms; crysta methamphetamine (ice), steroids, and "been drunk" were in two forms; and nitrites, PCP, methaqualone and smokeless tobacco were in one form. The N's in Table 7 should be adjusted accordingly (i.e., the approximate N for inhalants is five-sixths of the 12th grade N given in Table 7).
See Table 4-6 for sample sizes.

SOURCE: The Monitoring the Future Study, the University of Michigan.

[a] Unadjusted for known underreporting of certain drugs. See text for details.

[b] In 1995, the heroin question was changed in half of the questionnaire forms. Separate questions were asked for use with injection and without injection. Data presented here represent the combined data from all forms.

[c] Only drug use which was not under doctor's orders is included here.

[d] Parental education is an average score of mother's education and father's education reported on the following scale: (1) Completed grade school or less, (2) Some high school, (3) Completed high school, (4) Some college, (5) Completed college, (6) Graduate or professional school after college. Missing data was allowed on one of the two variables.

TABLE 4-7

Thirty-Day Prevalence of Use of Various Types of Drugs by Subgroups Eighth, Tenth, and Twelfth Graders, 1996

(Entries are percentages)

	Approx. N			Marijuana			Inhalants[a,b]			Hallucinogens[b]			LSD			Cocaine		
Grade:	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th
Total	*17800*	*15600*	*11300*	11.3	20.4	21.9	5.8	3.3	2.5	1.9	2.8	3.5	1.5	2.4	2.5	1.3	1.7	2.0
Sex:																		
Male	*8,400*	*7,500*	*6,700*	12.1	22.3	25.1	4.8	3.4	3.1	2.0	3.3	4.7	1.7	2.8	3.3	1.2	1.8	2.6
Female	*8,800*	*7,800*	*7,100*	10.2	18.6	18.3	6.6	3.2	2.0	1.6	2.3	2.3	1.2	2.0	1.6	1.4	1.6	1.4
College Plans:																		
None or under 4 yrs.	*2,200*	*2,300*	*2,600*	24.5	35.2	26.4	9.9	5.8	2.9	5.2	6.4	4.3	4.2	5.4	3.3	4.5	4.1	3.5
Complete 4 yrs.	*14,800*	*13,000*	*10,800*	9.1	17.9	20.0	5.2	2.9	2.4	1.3	2.2	3.2	1.0	1.8	2.2	0.8	1.2	1.6
Region:																		
Northeast	*3,200*	*3,100*	*3,000*	9.2	21.9	25.9	6.0	4.6	3.9	1.9	3.2	4.6	1.4	2.5	3.6	1.4	1.2	2.4
North Central	*4,600*	*3,900*	*3,800*	11.8	20.7	23.3	6.6	3.4	2.7	2.0	3.3	4.0	1.6	2.7	2.8	1.4	1.5	1.9
South	*6,300*	*5,600*	*5,100*	10.3	20.3	19.5	5.2	3.0	2.1	1.7	2.6	2.8	1.3	2.4	2.1	1.2	1.7	1.6
West	*3,700*	*3,000*	*2,400*	13.9	18.9	19.7	5.5	2.6	1.7	2.1	2.4	3.1	1.7	1.8	1.4	1.5	2.4	2.5
Population Density:																		
Large MSA	*5,200*	*4,300*	*3,400*	11.3	18.4	22.9	5.4	2.6	2.9	1.8	2.7	4.4	1.5	2.2	2.9	1.4	1.8	1.7
Other MSA	*8,400*	*7,500*	*7,000*	12.0	22.2	23.7	6.3	3.4	2.6	1.9	3.2	3.9	1.6	2.8	2.8	1.3	1.6	2.0
Non-MSA	*4,200*	*3,800*	*3,900*	9.7	19.3	17.6	5.2	4.0	2.2	1.7	2.3	2.2	1.3	1.8	1.6	1.4	1.7	2.2
Parental Education:[c]																		
1.0-2.0 (Low)	*1,500*	*1,100*	*1,100*	12.5	21.4	17.4	4.9	3.7	2.0	2.3	3.9	3.0	1.9	3.2	2.4	2.1	3.1	2.8
2.5-3.0	*4,300*	*3,600*	*3,300*	13.4	22.9	20.6	6.4	3.6	2.9	2.2	3.0	2.7	1.8	2.6	2.2	1.6	1.9	2.1
3.5-4.0	*4,100*	*4,300*	*3,800*	12.0	22.1	22.9	6.3	3.5	2.6	1.7	3.1	3.8	1.4	2.7	2.7	1.4	1.6	2.1
4.5-5.0	*3,900*	*3,900*	*3,500*	9.3	18.1	22.1	6.0	3.0	2.8	1.9	2.5	3.8	1.5	2.0	2.5	1.1	1.3	2.1
5.5-6.0 (High)	*2,200*	*1,900*	*2,100*	9.2	17.4	22.6	5.1	3.1	1.8	1.4	2.4	3.8	1.1	1.9	2.1	0.9	0.9	1.2

SOURCE: The Monitoring the Future Study, the University of Michigan.

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[a] 12th grade only. Data based on five of six forms; N is five-sixths of N indicated.

[b] Unadjusted for known underreporting of certain drugs. See text for details.

[c] Parental education is an average score of mother's education and father's education reported on the following scale: (1) Completed grade school or less, (2) Some high school, (3) Completed high school, (4) Some college, (5) Completed college, (6) Graduate or professional school after college. Missing data was allowed on one of the two variables

(Table continued on next page)

TABLE 4-7 (cont.)

Thirty-Day Prevalence of Use of Various Types of Drugs by Subgroups Eighth, Tenth, and Twelfth Graders, 1996

(Entries are percentages)

	Crack			Other Cocaine[a]			Heroin[b]			Other Opiates[c]			Stimulants[c]			Barbiturates[c]		
Grade	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th
Total	0.8	0.8	1.0	1.0	1.3	1.6	0.7	0.5	0.5	—	—	2.0	4.6	5.5	4.1	—	—	2.1
Sex:																		
Male	0.7	0.9	1.3	0.9	1.4	1.8	0.7	0.6	0.7	—	—	2.5	3.2	4.6	4.1	—	—	2.3
Female	0.9	0.7	0.7	1.1	1.2	1.3	0.7	0.4	0.2	—	—	1.5	5.7	6.4	3.8	—	—	1.8
College Plans:																		
None or under 4 yrs.	2.6	2.0	2.0	3.6	3.1	2.5	2.4	1.1	0.9	—	—	2.7	7.7	10.4	6.2	—	—	3.0
Complete 4 yrs.	0.6	0.5	0.8	0.6	1.0	1.3	0.5	0.4	0.3	—	—	1.7	4.1	4.7	3.4	—	—	1.8
Region:																		
Northeast	0.9	0.6	1.1	1.2	0.8	2.1	1.1	0.3	0.7	—	—	1.9	3.8	5.0	4.4	—	—	2.2
North Central	1.0	0.9	1.3	1.1	1.1	1.4	0.7	0.6	0.3	—	—	2.4	5.6	6.5	4.6	—	—	2.0
South	0.7	0.6	0.6	0.9	1.4	1.4	0.7	0.6	0.5	—	—	2.0	4.5	5.7	4.0	—	—	2.5
West	0.8	1.1	1.2	1.1	2.0	1.6	0.6	0.3	0.2	—	—	1.6	4.0	4.3	3.3	—	—	1.3
Population Density:																		
Large MSA	0.8	0.8	1.1	1.1	1.4	1.4	0.6	0.4	0.5	—	—	1.8	4.0	4.4	3.2	—	—	1.7
Other MSA	0.8	0.8	0.9	1.0	1.3	1.6	0.8	0.6	0.5	—	—	1.8	4.8	5.6	4.0	—	—	2.2
Non-MSA	1.0	0.8	1.0	1.1	1.3	1.8	0.9	0.4	0.4	—	—	2.6	4.9	6.5	5.0	—	—	2.3
Parental Education:[4]																		
1.0-2.0 (Low)	1.5	1.2	2.0	1.5	2.7	2.2	0.9	0.3	0.8	—	—	2.1	5.2	8.5	3.0	—	—	2.0
2.5-3.0	1.0	1.1	1.0	1.3	1.4	1.5	0.8	0.6	0.4	—	—	2.3	4.8	6.4	4.7	—	—	2.0
3.5-4.0	0.9	0.7	1.1	1.1	1.3	1.7	0.8	0.5	0.4	—	—	1.9	5.6	6.1	4.1	—	—	1.8
4.5-5.0	0.6	0.5	0.7	0.9	1.0	1.7	0.7	0.5	0.6	—	—	1.7	3.8	4.1	4.1	—	—	2.3
5.5-6.0 (High)	0.4	0.5	0.7	0.8	0.8	1.0	0.3	0.4	0.3	—	—	1.8	4.5	4.1	3.4	—	—	1.9

NOTE: '—' indicates data not available.
SOURCE: The Monitoring the Future Study, the University of Michigan.

[a] 12th grade only: Data based on four of six forms; N is four-sixths of N indicated.

[b] In 1995, the heroin question was changed in three of six forms for 12th graders and in one of two forms for 8th and 10th graders. Separate questions were asked for use with injection and without injection. Data presented here represent the combined data from all forms. In 1996, the heroin question was changed in the remaining 8th and 10th grade form.

[c] Only drug use which was not under doctor's orders is included here.

[d] Parental education is an average score of mother's education and father's education reported on the following scale: (1) Completed grade school or less, (2) Some high school, (3) Completed high school, (4) Some college, (5) Completed college, (6) Graduate or professional school after college. Missing data was allowed on one of the two variables.

(Table continued on next page)

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TABLE 4-7 (cont.)

Thirty-Day Prevalence of Use of Various Types of Drugs by Subgroups Eighth, Tenth, and Twelfth Graders, 1996

(Entries are percentages)

	Tranquilizers[a]			Alcohol			Been Drunk[b]			Cigarettes			Smokeless Tobacco[c]			Steroids[b]		
Grade:	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th
Total	1.5	1.7	2.0	26.2	40.4	50.8	9.6	21.3	31.3	21.0	30.4	34.0	7.1	8.6	9.8	0.4	0.5	0.7
Sex:																		
Male	1.0	1.7	2.3	26.6	42.6	54.8	9.7	23.0	35.4	20.6	30.1	34.9	11.4	15.0	19.5	0.6	0.8	1.1
Female	1.9	1.7	1.6	25.8	38.3	46.9	9.5	19.8	27.3	21.1	30.8	32.4	2.9	2.3	1.1	0.2	0.2	0.3
College Plans:																		
None or under 4 yrs.	2.8	3.9	2.9	41.7	53.3	54.8	19.3	32.0	31.4	39.2	46.2	45.0	16.4	16.3	17.6	0.7	0.9	1.2
Complete 4 yrs.	1.3	1.4	1.7	24.0	38.3	49.3	8.2	19.7	31.0	18.2	27.8	30.8	5.6	7.2	7.6	0.4	0.4	0.6
Region:																		
Northeast	1.2	1.5	2.0	26.9	41.4	56.5	9.7	22.4	37.2	22.1	31.7	38.5	4.9	6.8	8.4	0.6	0.4	0.9
North Central	1.7	1.7	2.0	26.9	39.1	51.5	10.2	22.0	31.5	23.2	32.5	37.7	8.3	9.5	12.6	0.4	0.7	0.8
South	1.7	2.3	2.5	26.3	41.7	51.1	9.1	21.4	31.0	21.1	33.4	33.2	8.1	10.2	9.2	0.5	0.7	0.7
West	1.1	0.9	0.8	24.8	38.9	42.1	9.8	19.3	24.7	17.1	20.8	24.4	5.9	6.0	8.5	0.3	0.1	0.3
Population Density:																		
Large MSA	1.4	1.4	1.4	24.9	37.9	51.6	8.9	19.6	31.5	19.4	26.2	32.1	4.2	5.5	8.6	0.3	0.4	1.0
Other MSA	1.6	1.6	2.3	27.4	41.0	50.1	9.9	21.9	33.0	21.4	31.1	32.6	7.1	8.4	7.4	0.5	0.5	0.6
Non-MSA	1.4	2.3	2.0	25.7	42.1	51.4	10.0	22.4	28.2	22.1	33.9	38.2	10.6	12.2	15.3	0.5	0.8	0.7
Parental Education:[d]																		
1.0-2.0 (Low)	2.6	2.3	2.0	28.1	43.2	41.2	11.1	22.1	18.8	26.5	28.7	31.5	6.3	8.1	6.3	0.5	0.6	1.5
2.5-3.0	1.5	2.1	1.8	30.1	42.6	48.2	11.9	23.4	27.4	24.4	33.8	35.5	8.8	9.7	10.4	0.3	0.3	1.0
3.5-4.0	1.8	1.9	2.0	27.6	42.2	51.4	10.4	22.1	31.1	21.4	31.6	33.2	7.2	8.3	9.1	0.4	0.6	0.4
4.5-5.0	1.2	1.4	1.8	25.0	37.8	53.6	8.7	19.5	35.8	18.4	28.7	34.5	6.8	8.5	11.4	0.6	0.4	0.5
5.5-6.0 (High)	1.1	1.3	2.5	21.5	39.6	54.2	7.1	22.3	34.6	17.3	27.8	32.9	5.9	7.7	8.1	0.5	0.6	0.7

SOURCE: The Monitoring the Future Study, the University of Michigan.

[a] Only drug use not under a doctor's orders is included here.

[b] 12th grade only: Data based on two of six forms; N is two-sixths of N indicated.

[c] Data based on one form; N is one-half of N indicated for 8th and 10th graders and one-sixth of N indicated for 12th graders.

[d] Parental education is an average score of mother's education and father's education reported on the following scale: (1) Completed grade school or less, (2) Some high school, (3) Completed high school, (4) Some college, (5) Completed college, (6) Graduate or professional school after college. Missing data was allowed on one of the two variables.

TABLE 4-9

Racial/Ethnic Comparisons of Lifetime, Annual, Thirty-Day, and Daily Prevalence of Use of Various Types of Drugs Eighth, Tenth, and Twelfth Graders

NOTE: Percentages represent combined 1995 and 1996 data.[a]

	Marijuana			Inhalants[b,c]			Hallucinogens[c]			LSD			Cocaine			Crack		
Grade:	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th
Lifetime:																		
White	20.5	37.1	43.9	24.3	21.7	19.4	6.2	11.1	14.7	5.4	10.0	13.5	4.2	5.7	6.5	2.7	2.9	2.9
Black	19.7	34.3	39.0	9.8	6.2	6.4	1.1	1.6	2.3	0.9	1.3	1.8	1.1	1.1	1.2	0.8	0.7	0.9
Hispanic	27.2	42.2	43.5	21.6	17.5	13.7	6.2	10.0	13.2	5.3	9.1	12.2	8.0	10.8	11.3	5.0	5.7	6.0
Annual:																		
White	16.7	32.0	36.4	14.6	11.0	9.0	4.5	8.6	10.8	3.9	7.7	9.7	2.8	3.8	4.5	1.7	1.9	2.0
Black	14.0	25.7	30.2	4.2	2.3	2.2	0.7	0.9	1.7	0.6	0.8	1.3	0.6	0.7	0.8	0.4	0.4	0.7
Hispanic	20.8	31.6	32.3	12.7	8.2	5.9	4.1	6.6	8.3	3.5	6.1	7.4	4.8	7.0	7.3	3.0	3.7	4.1
30-Day:																		
White	10.0	19.3	22.0	6.8	3.9	3.3	2.0	3.5	4.4	1.6	3.1	3.7	1.2	1.6	1.9	0.7	0.8	0.9
Black	8.0	15.9	18.3	2.0	1.2	1.0	0.5	0.5	0.6	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.2	0.5
Hispanic	12.5	19.1	19.1	6.4	2.9	2.1	2.2	3.1	4.0	1.9	2.8	3.3	2.3	2.9	3.2	1.2	1.4	2.1
Daily:																		
White	1.0	3.2	4.7	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Black	1.2	2.2	3.7	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Hispanic	1.6	2.8	4.2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

NOTE: The following sample sizes are based on the 1995 and 1996 surveys combined:

Sample Sizes	8th Grade	10th Grade	12th Grade
White	20,200	22,400	20,700
Black	5,300	3,100	3,200
Hispanic	4,000	3,000	2,600

SOURCE: The Monitoring the Future Study, the University of Michigan.

(Table continued on next page)

TABLE 4-9 (cont.)

Racial/Ethnic Comparisons of Lifetime, Annual, Thirty-Day, and Daily Prevalence of Use of Various Types of Drugs
Eighth, Tenth, and Twelfth Graders

NOTE: Percentages represent combined 1995 and 1996 data.[a]

	Other Cocaine[d]			Heroin[e]			Other Opiates[f]			Stimulants[f]			Barbiturates[f]			Tranquilizers[f]		
Grade	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th
Lifetime:																		
White	3.5	4.8	5.7	2.5	2.0	1.7	—	—	8.9	14.7	19.5	16.9	—	—	8.2	5.2	7.3	8.0
Black	0.7	1.0	0.9	0.7	0.4	0.6	—	—	2.1	6.2	5.8	5.9	—	—	2.2	2.4	1.7	1.9
Hispanic	6.9	9.6	9.7	3.3	2.3	2.4	—	—	5.4	13.9	16.9	13.7	—	—	7.6	6.5	6.4	6.9
Annual:																		
White	2.4	3.2	3.9	1.6	1.2	1.0	—	—	5.9	10.2	13.9	10.5	—	—	5.4	3.2	4.9	5.1
Black	0.4	0.6	0.7	0.5	0.2	0.5	—	—	1.2	3.4	3.4	2.9	—	—	1.1	1.3	0.7	0.9
Hispanic	4.1	6.1	5.6	2.1	1.0	1.5	—	—	3.7	8.6	10.3	7.8	—	—	4.0	3.5	3.4	4.3
30-Day:																		
White	1.0	1.3	1.5	0.7	0.6	0.5	—	—	2.1	5.0	6.1	4.4	—	—	2.3	1.5	1.9	2.1
Black	0.3	0.2	0.3	0.3	0.2	0.3	—	—	0.6	1.8	1.6	1.5	—	—	0.4	0.8	0.5	0.4
Hispanic	2.0	2.5	2.1	1.2	0.4	0.7	—	—	1.4	4.5	4.5	3.5	—	—	1.6	1.8	1.4	1.7
Daily:																		
White	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Black	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Hispanic	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

SOURCE: The Monitoring the Future Study, the University of Michigan.

(Table continued on next page)

TABLE 4-9 (cont.)

Racial/Ethnic Comparisons of Lifetime, Annual, Thirty-Day, and Daily Prevalence of Use of Various Types of Drugs Eighth, Tenth, and Twelfth Graders

NOTE: Percentages represent combined 1995 and 1996 data.[a]

	Alcohol			Been Drunk[d]			5+ Drinks[h]			Cigarettes			Smokeless Tobacco[i]			Steroids[g]		
Grade	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th
Lifetime																		
White	54.4	72.4	81.9	26.9	50.9	66.7	—	—	—	49.2	62.3	67.1	23.6	31.7	35.0	1.8	2.0	2.1
Black	52.2	64.7	72.9	19.3	31.3	39.9	—	—	—	39.0	43.6	47.0	8.2	8.5	11.9	1.1	1.3	1.7
Hispanic	63.3	75.8	79.5	30.5	49.9	59.7	—	—	—	52.1	59.3	63.9	17.0	19.8	20.5	3.1	1.6	1.4
Annual																		
White	47.0	66.9	75.9	20.4	43.3	57.5	—	—	—	—	—	—	—	—	—	0.9	1.3	1.3
Black	37.1	50.9	61.6	11.5	19.3	25.7	—	—	—	—	—	—	—	—	—	0.7	0.7	1.4
Hispanic	53.0	67.8	71.4	22.1	38.9	45.4	—	—	—	—	—	—	—	—	—	1.5	1.1	0.6
30-Day																		
White	26.6	42.2	54.8	9.7	23.7	36.6	—	—	—	22.7	32.9	38.1	8.8	11.0	13.0	0.4	0.6	0.5
Black	18.1	23.9	36.5	5.5	8.5	13.0	—	—	—	9.6	12.2	14.2	2.2	2.5	2.7	0.4	0.4	0.8
Hispanic	29.7	44.0	47.5	10.8	20.1	26.2	—	—	—	19.6	23.7	25.4	5.2	4.0	8.1	0.8	0.6	0.5
Daily																		
White	0.8	1.7	3.7	—	—	—	15.1	26.2	33.4	11.7	20.0	25.4	—	—	—	—	—	—
Black	0.8	0.6	2.2	—	—	—	10.4	12.2	15.3	3.2	5.1	7.0	—	—	—	—	—	—
Hispanic	1.4	2.3	4.0	—	—	—	21.0	29.6	27.1	8.0	11.6	12.9	—	—	—	—	—	—

NOTE: '—' indicates data not available.
SOURCE: The Monitoring the Future Study, the University of Michigan.

[a] To derive percentages for each racial subgroup, data for the specified year *and* the previous year have been combined to increase subgroup sample sizes and thus provide more stable estimates.

[b] 12th grade only: Data based on five of six forms; N is five-sixths of N indicated.

[c] Unadjusted for known underreporting of certain drugs. See text for details.

[d] 12th grade only: Data based on four of six forms; N is four-sixths of N indicated.

[e] In 1995, the heroin question was changed in three of six forms for 12th graders and in one of two forms for 8th and 10th graders. Separate questions were asked for use with injection and without injection. Data presented here represent the combined data from all forms. In 1996, the heroin question was changed in the remaining 8th and 10th grade form.

[f] Only drug use which was not under a doctor's orders is included here.

[g] 12th grade only: Data based on two of six forms; N is two-sixths of N indicated.

[h] This measure refers to use of five or more drinks in a row in the past two weeks.

[i] Data based on one form: N is one-half of N indicated for 8th and 10th grades and one-sixth of N indicated for 12th grade.

TABLE 6-1a

Incidence of Use for Various Drugs, by Grade Eighth Graders, 1996

(Entries are percentages)

Grade in which drug was first used:	Marijuana	Inhalants	Hallucinogens	LSD	Cocaine	Crack	Coke Powder	Heroin	Stimulants	Tranquilizers	Alcohol	Been Drunk	Cigarettes	Cigarettes (Daily)[a]	Smokeless Tobacco	Steroids
4th	0.8	3.9	0.3	0.2	0.3	0.2	0.1	0.2	0.6	0.2	9.8	1.5	9.4	0.6	3.3	0.2
5th	1.6	2.8	0.3	0.1	0.3	0.2	0.3	0.3	0.8	0.4	7.6	2.1	9.1	1.1	2.8	0.1
6th	4.6	4.8	0.9	0.7	0.7	0.5	0.5	0.3	2.1	0.8	12.7	4.8	12.3	2.8	4.2	0.4
7th	8.7	6.1	2.1	1.9	1.6	1.1	1.3	0.9	4.6	2.0	16.3	9.9	12.9	5.4	6.5	0.5
8th	7.4	3.6	2.4	2.1	1.7	0.9	1.6	0.8	5.4	1.8	9.0	8.5	5.6	3.8	3.7	0.5
Never used	76.9	78.8	94.1	94.9	95.5	97.1	96.2	97.6	86.5	94.7	44.7	73.2	50.8	86.3	79.6	98.2

NOTES: All drugs were asked about in both forms except for the following: hallucinogens, LSD, heroin, stimulants, tranquilizers, and smokeless tobacco, which were in one form only. The approximate N for both forms was 15,500.

SOURCE: The Monitoring the Future Study, the University of Michigan.

[a] Data based on the percent of regular smokers (ever).

TABLE 6-1b

Incidence of Use for Various Drugs, by Grade
Tenth Graders, 1996

(Entries are percentages)

Grade in which drug was first used:	Manjuana	Inhalants	Hallucinogens	LSD	Cocaine	Crack	Coke Powder	Heroin	Stimulants	Tranquilizers	Alcohol	Been Drunk	Cigarettes	Cigarettes (Daily)ª	Smokeless Tobacco	Steroids
4th	0.6	1.7	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.2	1.0	6.4	0.2	2.4	0.1
5th	0.6	1.3	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	3.6	1.0	6.1	0.5	1.6	0.1
6th	1.8	2.2	0.1	0.1	0.1	0.1	0.1	0.0	0.6	0.2	7.1	2.8	8.8	1.4	3.3	0.1
7th	4.8	3.5	0.6	0.4	0.3	0.2	0.3	0.1	1.8	0.7	12.3	6.5	12.0	3.3	4.5	0.1
8th	9.9	4.6	1.8	1.7	1.2	0.6	0.9	0.4	3.8	1.4	18.6	12.4	13.0	5.3	5.9	0.3
9th	14.2	4.0	5.1	4.5	2.8	1.5	2.3	1.0	7.5	2.9	18.7	17.0	11.1	7.9	6.4	0.8
10th	7.9	2.1	2.8	2.6	2.0	0.9	1.7	0.4	3.8	1.7	6.2	7.9	3.7	3.8	3.2	0.4
Never used	60.2	80.7	89.5	90.6	93.5	96.7	94.5	97.9	82.3	92.9	28.2	51.5	38.8	77.6	72.6	98.2

NOTES: All drugs were asked about in both forms except for the following: hallucinogens, LSD, heroin, stimulants, tranquilizers, and smokeless tobacco, which were in one form only. The approximate N for both forms was 14,500.

SOURCE: The Monitoring the Future Study, the University of Michigan.

ªData based on percent of regular smokers (ever).

TABLE 6-1c

Incidence of Use for Various Drugs, by Grade Twelfth Graders, 1996

(Entries are percentages)

Grade in which drug was first used:	Marijuana	Inhalants[a]	Amyl/Butyl Nitrites	Hallucinogens[a]	LSD	PCP	Cocaine	Crack	Other Forms of Cocaine	Heroin	Other Opiates	Stimulants[b]	Barbiturates	Methaqualone	Tranquilizers	Alcohol	Been Drunk	Cigarettes	Cigarettes (Daily)[c]	Smokeless Tobacco	Steroids
6th	1.6	1.7	0.3	0.1	0.1	0.3	0.3	0.2	0.2	0.2	0.4	0.4	0.2	0.2	0.4	8.2	2.6	14.9	1.5	5.3	0.3
7–8th	6.3	4.0	0.1	1.3	1.1	0.6	0.4	0.4	0.3	0.3	1.0	2.4	1.1	0.3	0.8	21.0	13.0	19.4	5.0	7.5	0.1
9th	10.4	2.9	0.3	2.3	2.2	0.4	0.7	0.3	0.7	0.3	1.2	2.6	1.1	0.3	1.0	19.4	15.4	11.1	5.9	5.9	0.3
10th	11.6	3.1	0.5	3.6	3.3	0.6	1.5	0.8	1.3	0.3	1.8	4.2	2.4	0.5	1.8	14.2	13.5	8.3	5.3	5.2	0.5
11th	10.0	2.2	0.3	4.1	3.6	1.3	2.3	0.8	2.1	0.4	2.3	3.5	1.5	0.3	1.4	11.0	11.2	6.5	5.3	3.8	0.3
12th	5.1	2.6	0.3	2.5	2.3	0.8	1.8	0.8	1.8	0.4	1.6	2.2	1.3	0.3	1.7	5.4	6.0	3.3	2.2	2.0	0.5
Never used	55.1	83.4	98.2	86.0	87.4	96.0	92.9	96.7	93.6	98.2	91.8	84.7	92.4	98.0	92.8	20.8	38.2	36.5	74.9	70.2	98.1

NOTES: Percentages are based on three of the six forms (N = approximately 6,300) except for cocaine and crack, which are based on four of the six forms (N = approximately 8,400), inhalants, other forms of cocaine, smokeless tobacco and steroids, which are based on two of the six forms (N = approximately 3,800), and PCP and nitrites, which are based on one of the six forms (N = approximately 2,100).

SOURCE: The Monitoring the Future Study, the University of Michigan.

[a] Unadjusted for known underreporting of certain drugs. See text for details.

[b] Based on the data from the revised question, which attempts to exclude the inappropriate reporting of non-prescription stimulants.

[c] Data based on percent of regular smokers (ever).

TABLE 6-1d

Incidence of Use for Various Drugs: A Comparison of Responses from Eighth, Tenth, and Twelfth Graders, 1996

(Entries are percentages)

Grade level of respondents:	Marijuana	Inhalants[a]	Hallucinogens[a]	LSD	Cocaine	Heroin	Stimulants[b]	Tranquilizers	Alcohol	Been Drunk	Cigarettes	Cigarettes (Daily)[c]
	Percent who used by end of 6th grade											
8th	7.0	11.5	1.5	1.0	1.3	0.8	3.5	1.4	30.1	8.4	30.8	4.5
10th	3.0	5.2	0.2	0.2	0.2	0.1	0.7	0.3	15.9	4.8	21.3	2.1
12th	1.6	1.7	0.1	0.1	0.3	0.2	0.4	0.4	8.2	2.6	14.9	1.5
	Percent who used by end of 8th grade											
8th	23.1	21.2	6.0	5.0	4.6	2.5	13.5	5.2	55.4	26.8	49.3	13.7
10th	17.7	13.3	2.6	2.3	1.7	0.6	6.3	2.4	46.8	23.7	46.3	10.7
12th	7.9	5.7	1.4	1.2	0.7	0.5	2.8	1.2	29.2	15.6	34.3	6.5
	Percent who used by end of 10th grade											
10th	39.8	19.4	10.5	9.4	6.5	2.0	17.6	7.0	71.7	48.6	61.1	22.4
12th	29.9	11.7	7.3	6.7	2.9	1.1	9.6	4.0	62.8	44.5	53.7	17.7

NOTES: For 8th and 10th graders, all drugs were asked about in both forms except for the following: hallucinogens, LSD, heroin, stimulants, tranquilizers, and smokeless tobacco, which were in one form only. The approximate N for both forms for 8th graders was 15,500 and for 10th graders was 14,500. For 12th graders, percentages are based on three of the six forms (N = approximately 6,300) except for cocaine and crack, which are based on four of the six forms (N = approximately 8,400), inhalants, other forms of cocaine, smokeless tobacco, and steroids, which are based on two of six forms (N = approximately 3,800), and PCP and nitrites, which are based on one of six forms (N = approximately 2,100).

SOURCE: The Monitoring the Future Study, the University of Michigan.

[a] Unadjusted for underreporting of certain drugs. See text for details.

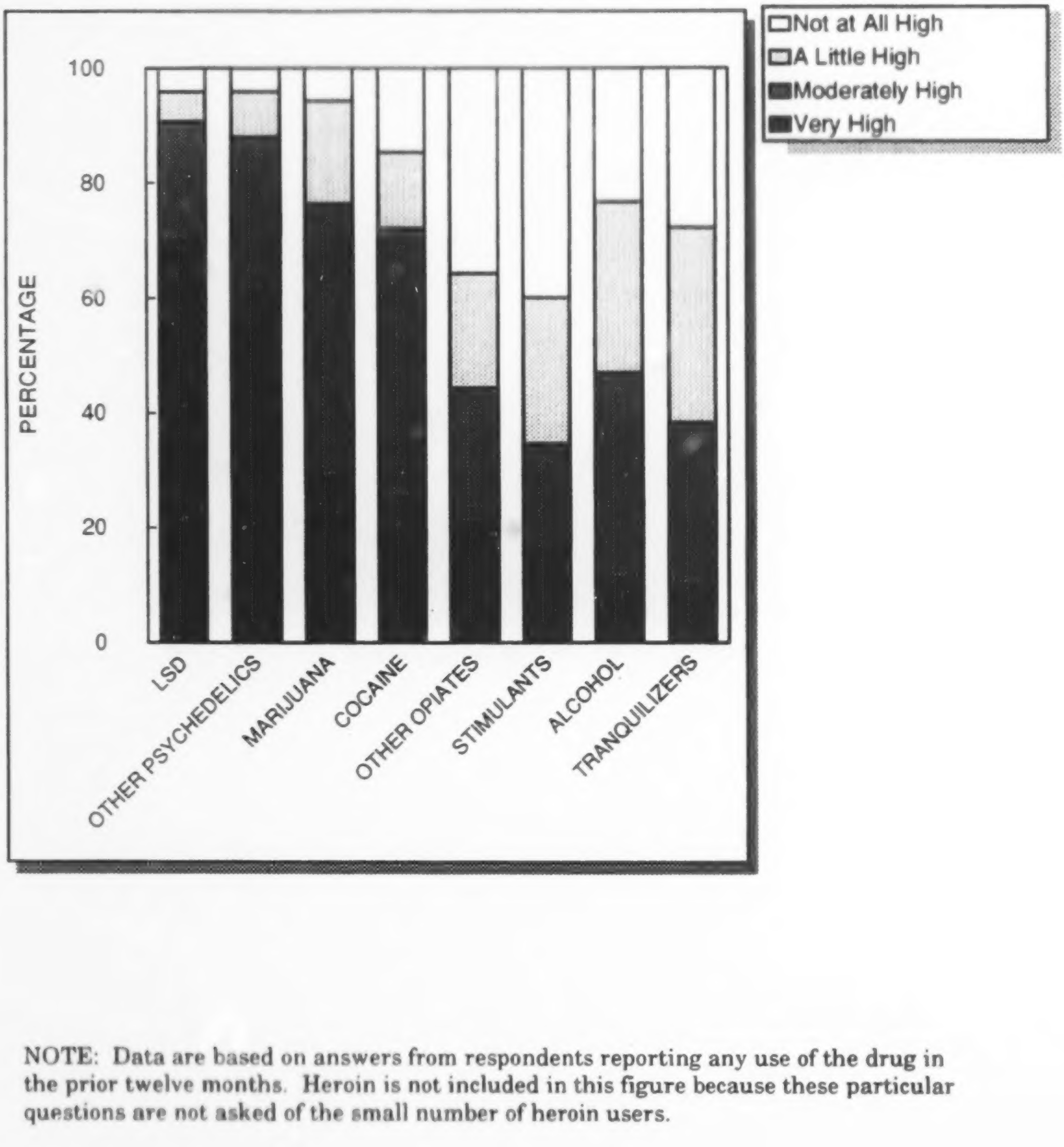
[b] Based on the data from the revised question, which attempts to exclude the inappropriate reporting of non-prescription stimulants.

[c] Data based on percent of regular smokers (ever).

FIGURE 7-1

Degree of Drug Highs Attained by Recent Users

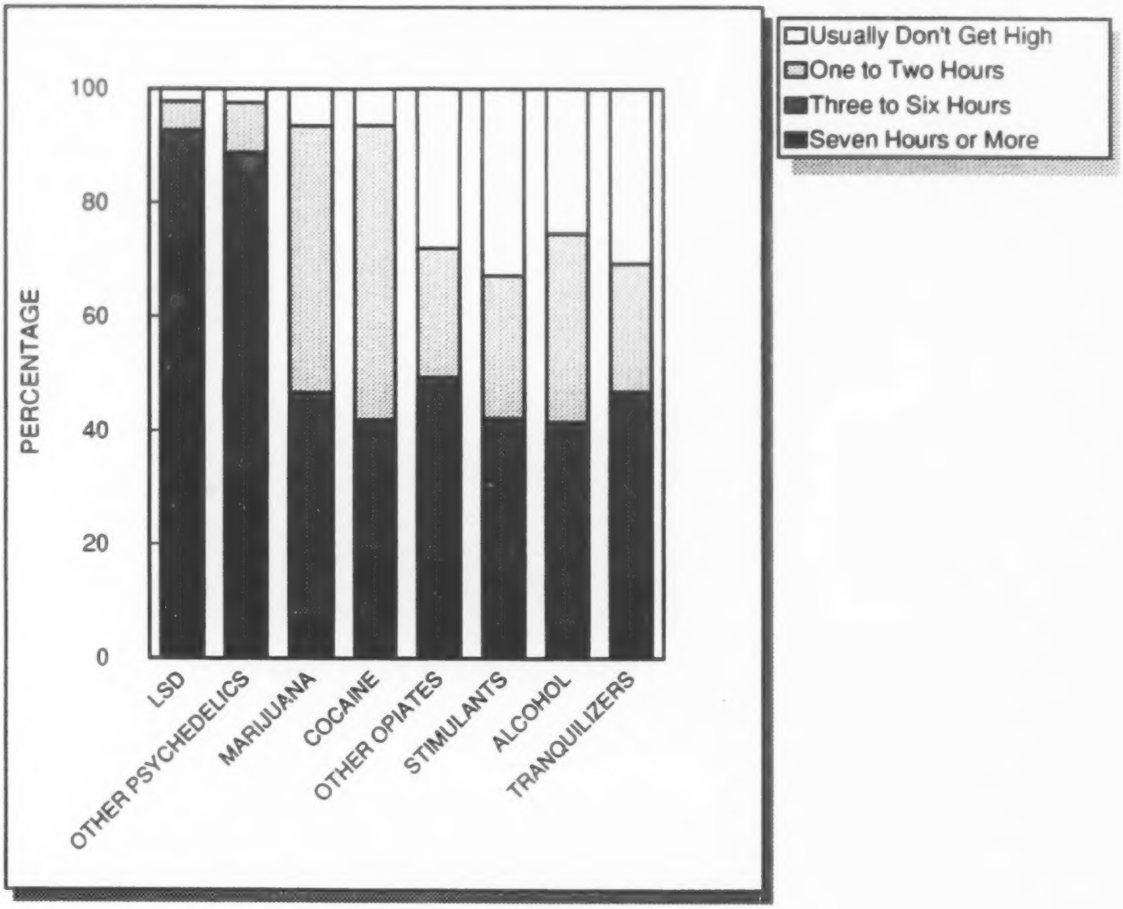
Twelfth Graders, 1996



NOTE: Data are based on answers from respondents reporting any use of the drug in the prior twelve months. Heroin is not included in this figure because these particular questions are not asked of the small number of heroin users.

FIGURE 7-2

Duration of Drug Highs Attained by Recent Users
Twelfth Graders, 1996



NOTE: Data are based on answers from respondents reporting any use of the drug in the prior twelve months. Heroin is not included in this figure because these particular questions are not asked of the small number of heroin users.

TABLE 10-3

Daily Marijuana Use: Responses to Selected Questions by Subgroups
Twelfth Graders, 1996

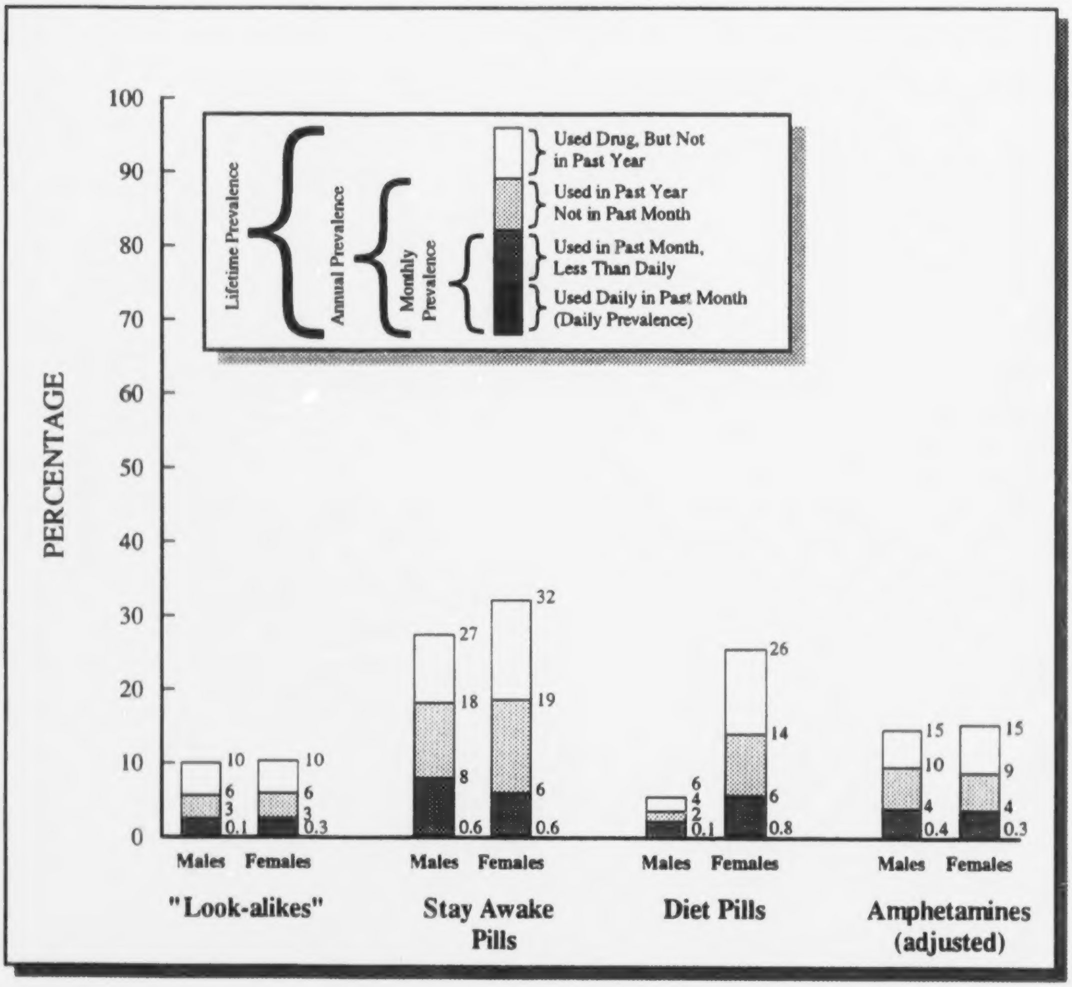
	Total	Sex		4-Year College Plans		Region				Population Density		
		Male	Female	No	Yes	North East	North Central	South	West	Large MSA	Other MSA	Non-MSA
Q. *Thinking back over your whole life, has there ever been a period when you used marijuana or hashish on a daily, or almost daily, basis for at least a month?*												
No	84.3	81.3	89.3	78.5	88.1	78.7	85.4	87.3	83.0	84.7	81.8	88.4
Yes	15.7	18.7	10.7	21.5	11.9	21.3	14.6	12.7	17.0	15.3	18.2	11.6
Q. *How old were you when you first smoked marijuana or hashish that frequently?*												
Grade 6 or earlier	1.1	1.4	0.7	1.3	0.9	0.8	1.3	0.7	2.5	1.2	1.1	1.1
Grade 7 or 8	3.1	4.1	1.7	6.1	2.2	2.9	3.9	2.3	4.1	3.2	3.6	2.0
Grade 9 (Freshman)	3.6	4.1	2.5	3.6	2.7	4.6	3.7	2.8	3.5	4.8	3.6	2.5
Grade 10 (Sophomore)	4.5	4.9	3.2	7.1	3.1	6.8	3.8	4.2	3.3	2.7	6.0	3.4
Grade 11 (Junior)	2.5	2.9	1.8	2.6	2.3	4.4	1.1	1.8	3.4	2.2	3.0	1.7
Grade 12 (Senior)	1.0	1.1	0.8	0.8	1.0	1.8	0.9	0.9	0.3	1.1	1.0	0.8
Never used daily	84.3	81.3	89.3	78.5	88.1	78.7	85.4	87.3	83.0	84.7	81.8	88.4
Q. *How recently did you use marijuana or hashish on a daily, or almost daily, basis for at least a month?*												
During the past month	4.3	5.4	2.2	8.3	2.5	6.2	4.2	3.5	3.3	4.9	4.5	3.3
2 months ago	1.2	1.6	0.6	0.6	0.9	2.4	1.1	1.1	0.5	0.9	1.6	1.1
3 to 9 months ago	3.5	4.2	2.4	4.7	2.9	4.4	1.8	3.4	5.3	3.5	3.7	3.2
About 1 year ago	2.7	2.7	2.8	2.8	2.5	4.0	3.8	1.3	2.5	2.3	3.4	1.7
About 2 years ago	2.9	3.5	2.0	4.4	1.9	3.7	3.2	1.8	3.9	1.8	4.2	1.6
3 or more years ago	1.1	1.3	0.7	0.9	1.1	0.5	0.7	1.6	1.5	1.8	1.0	0.8
Never used daily	84.3	81.3	89.3	78.5	88.1	78.7	85.4	87.3	83.0	84.7	81.8	88.4
Q. *Over your whole lifetime, during how many months have you used marijuana or hashish on a daily or near-daily basis?*												
Less than 3 months	5.0	5.5	4.4	5.7	4.7	7.7	5.0	3.2	5.2	4.1	5.4	4.9
3 to 9 months	4.2	4.0	3.0	3.7	3.2	5.8	4.3	3.8	3.2	5.1	4.9	2.5
About 1 year	2.3	3.0	1.7	4.1	1.8	3.0	2.0	1.6	2.9	1.4	3.1	1.4
About 1 and 1/2 years	1.2	1.5	0.8	1.4	0.8	0.8	1.2	1.2	1.9	1.5	1.2	1.1
About 2 years	1.1	2.1	0.1	3.2	0.6	1.0	0.5	1.3	2.1	1.3	1.2	0.9
About 3 to 5 years	1.4	1.9	0.5	2.2	0.7	1.9	1.1	1.2	1.3	1.3	2.0	0.2
6 or more years	0.6	0.7	0.1	1.3	0.2	1.2	0.6	0.5	0.4	0.7	0.6	0.7
Never used daily	84.3	81.3	89.3	78.5	88.1	78.7	85.4	87.3	83.0	84.7	81.8	88.4
N =	*2330*	*1037*	*1158*	*404*	*1679*	*491*	*617*	*827*	*395*	*557*	*1152*	*621*

NOTE: Entries are percentages that sum vertically to 100 percent.
SOURCE: The Monitoring the Future Study, the University of Michigan.

FIGURE 10-1

Prevalence and Recency of Use, by Sex
Amphetamines and Non-Prescription Stimulants

Twelfth Graders, 1996



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